JVC

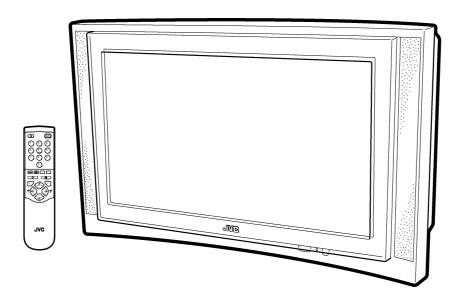
SERVICE MANUAL

COLOUR TELEVISION

AV32L2EUGR AV32L2EUBL AV32L2EUGY

BASIC CHASSIS

MF



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SPECIFICATIONS

ltem	Content
Dimensions (W×H×D)	901mm×556mm×557mm
Mass	53.8kg
TV RF System	CCIR (B/G, D/K, L, L', I)
Colour System	PAL / SECAM / NTSC (Only in EXT mode)
Stereo System	A2 (B/G, D/K) / NICAM (B/G, I, D/K, L)
Teletext System	Fastext (UK system) / TOP (German system) WST(World Standard system)
Receiving Frequency	
VHF	47MHz ~ 470MHz
UHF	470MHz ~ 862MHz • French cable TV channel of broadcast frequencies 116~172MHz & 220~469MHz
Intermediate Frequency	
VIF Carrier	38.9MHz (B/G, D/K, I, L) / 33.95MHz (L')
SIF Carrier	33.4MHz (5.5MHz : B/G)
	32.9MHz (6.0MHz : I) / 32.4MHz (6.5MHz : L, D/K) / 40.45MHz (6.5MHz : L')
Colour Sub Carrier Freq.	
PAL	4.43MHz
SECAM	4.40625MHz / 4.25MHz
NTSC	3.58MHz / 4.43MHz
Power Input	AC 220V~240V, 50Hz
Power Consumption	189W(Max) / 140W(Avg),
Aerial Input Term	75 Ω unbalanced, Coaxial
Picture Tube	Visible size : 76cm, Measured diagonally +1.0kV
High Voltage	31.0kV _{-1.5kV} (at zero beam current)
Speaker	20cm × 4cm, Oval type × 2 with BOX
Audio Output	7.5W + 7.5W
EXT-1/EXT-2/EXT-3 (IN/OUT)	21-pin Euro connector (SCART socket) × 3
EXT-4 (Input) Video	1Vp-p 75 Ω (RCA pin jack)
Audio(L/R)	500mVrms(-4dBs), High Impedance (RCA pin jack)
S / Video	Y: 1Vp-p POSITIVE (Negative sync Provided, when terminated with 75Ω)
	C: 0.3Vp-p (Burst signal, when terminated with 75 Ω)
AUDIO OUT (Variable)	0~1Vrms, Low Impedance (RCA pin jack × 2)
Headphone jack	Stereo mini jack (ϕ 3.5mm)
Remote Control Unit	RM-C54 (AAA/R03 dry cell battery × 2)

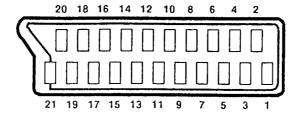
Design & specifications are subject to change without notice.

■21-pin Euro connector (SCART socket) : EXT-1 / EXT-2 / EXT-3

(P-P= Peak to Peak, B-W= Blanking to white peak)

Pin No.	Signal Designation	Matching Value	EXT-1	EXT-2	EXT-3
1	AUDIO R output	500mVrms(Nominal), Low impedance	O (TV OUT)	O (LINE OUT)	NC
2	AUDIO R input	500mVrms(Nominal), High impedance	0	0	0
3	AUDIO L output	500mVrms(Nominal), Low impedance	O (TV OUT)	O (LINE OUT)	NC
4	AUDIO GND		0	0	0
5	GND (B)		0	0	0
6	AUDIO L input	500mVrms(Nominal), High impedance	0	0	0
7	B input	700mV _{B-W} , 75Ω	0	0	NC
8	FUNCTON SW (SLOW SW)	Low: 0-3V, High: 8-12V, High impedance	0	0	0
9	GND (G)		0	0	0
10	SCL3		NC	0	NC
11	G input	700mV _{B-W} , 75Ω	0	0	NC
12	SDA3		NC	0	NC
13	GND (R)		0	0	0
14	GND (Y _S)		0	0	NC
15	R / C input	R: $700 \text{mV}_{\text{B-W}}$, 75Ω C: $300 \text{mV}_{\text{P-P}}$, 75Ω	O (only R)	0	O (only C)
16	Ys input	Low: 0 - 0.4, High: 1 - 3V, 75 Ω	0	0	NC
17	GND(VIDEO output)		0	0	0
18	GND(VIDEO input)		0	0	0
19	VIDEO output	$1V_{P-P}$ (Negative going sync), 75 Ω	O (TV)	O (LINE OUT)	NC
20	VIDEO / Y input	1V _{P-P} (Negative going sync), 75 Ω	0	0	0
21	COMMON GND		0	0	0

[Pin assignment]



SAFETY PRECAUTIONS

- The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
- Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
- 3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by shading on the schematics and by (Δ) on the parts list in Service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
- Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.

Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE: (⊥) side GND, the ISOLATED(NEUTRAL): (⊥) side GND and EARTH: (⊕) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.

If above note will not be kept, a fuse or any parts will be broken.

- If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
- 6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
- 7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a $10k\Omega$ 2W resistor to the anode button.
- 8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

9. Isolation Check

(Safety for Electrical Shock Hazard)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) Dielectric Strength Test

The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.

(.... Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)

This method of test requires a test equipment not generally found in the service trade.

(2) Leakage Current Check

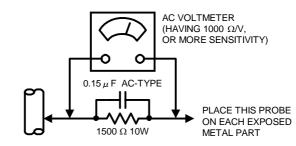
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

Alternate Check Method

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a $0.15\mu F$ AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).

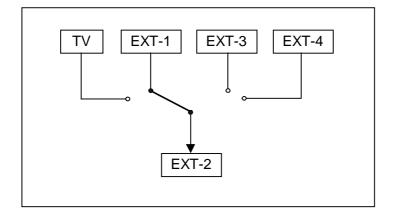


GOOD EARTH GROUND

FEATURES

- New chassis design enable use of an interactive on screen control.
- The TELETEXT SYSTEM has a built-in FASTEXT (UK system), TOP (German system) and WST (world standard system) system.
- Pure FLAT CRT reproduce fine textured.
- Digipure pro : Auto digi pure with motion picture compensation.
- Because this TV unit corresponds to multiplex broadcast, users can enjoy music programs and sporting events with live realism.
 In addition, BILINGUAL programs can be heard in their original language.
- Built-in ECO (ECONOMY, ECOLOGY) MODE.
 In accordance with the brightness in a room, the brightness and/or contrast of the picture can be adjusted automatically to make the optimum picture which is easy on the eye.

 Users can make VCR dubbing of picture and sound by controlling the AV selector to select an optional source at the EXT-2 output shown in figure.



MAIN DIFFERENCE LIST

Δ	Model name Part name	AV32L2EUGR	AV32L2EUBL	AV32L2EUGY
⚠	FRONT PANEL	LC10851-002B-U	LC10851-003A-U	LC10851-004A-U
⚠	RATING LABEL	LC20380-011A-U LC20379-011A-U	LC20380-015A-U LC20379-015A-U	LC20380-024A-U LC20379-020A-U
	EURO LABEL	AEM1052-019-E	AEM1052-061-E	AEM1052-072-E

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

- 1. Unplug the power cord.
- 2. Remove the 11 screws marked (A) as shown in the Fig. 1.
- 3. Withdraw the rear cover toward you.

REMOVING THE SIDE CONTROL JACK ASSEMBLY

- After removing the rear cover.
- 1. Remove the screw marked (B) as shown in the Fig.1.
- 2. While slightly raise the side control jack assembly, remove the 2 claws under the side control jack assembly.
- Disconnect the connector "SR", "SL", "S", "F" and "K" as shown in Fig 2.

REMOVING THE SIDE CONTROL PWB

- After removing the rear cover and side control jack assembly.
- Remove the 3 claws (C) from back side of the side control jack assembly as shown in Fig.2.
- 2. Pull out the SIDE CONTROL PWB.

REMOVING THE CHASSIS

- After removing the rear cover.
- Slightly raise the both sides of the chassis by hand and remove the two claws under the both sides of the chassis from the front cabinet.
- Withdraw the chassis backward. (If necessary, take off the wire clamp, connectors etc.)

REMOVING THE SPEAKER BOX/SPEAKER

- After removing the rear cover.
- 1. Remove the 2 screws marked **(D)** as shown in Fig. 1.
- **NOTE**: When removing the screws marked **(D)** of the speaker box assembly, remove the lower side screw first, and then remove the upper one.
- 2. Remove the 2 screws **(E)** attaching the speaker box.
- 3. Remove the 2 screws (F) attaching the speaker.
- 4. Follow the same steps when removing the other hand speaker.

REMOVING THE AV TERMINAL BOARD

- After removing the rear cover.
- 2. Remove the 2 claws marked (H) under the CHASSIS as shown in Fig. 3.
- 3. Remove the AV TERMINAL BOARD slightly in the direction of arrow (1) as shown in Fig. 3.

CHECKING THE PW BOARD

To check the back side of the PW Board.

- 1) Pull out the chassis. (Refer to REMOVING THE CHASSIS).
- Erect the chassis vertically so that you can easily check the back side of the PW Board.

[CAUTION]

- When erecting the chassis, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the wire connector is properly connected.
- When conducting a check with power supplied, be sure to confirm that the CRT EARTH WIRE (BRAIDED ASS'Y) is connected to the CRT SOCKET PW board.

WIRE CLAMPING AND CABLE TYING

- 1. Be sure to clamp the wire.
- Never remove the cable tie used for tying the wires together. Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

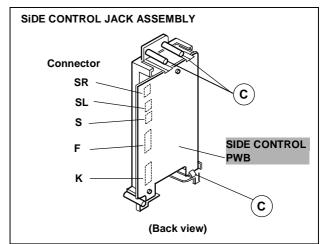
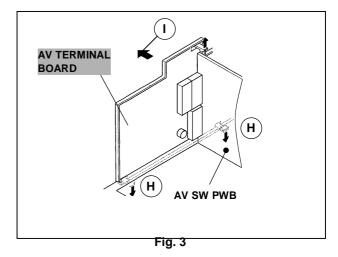
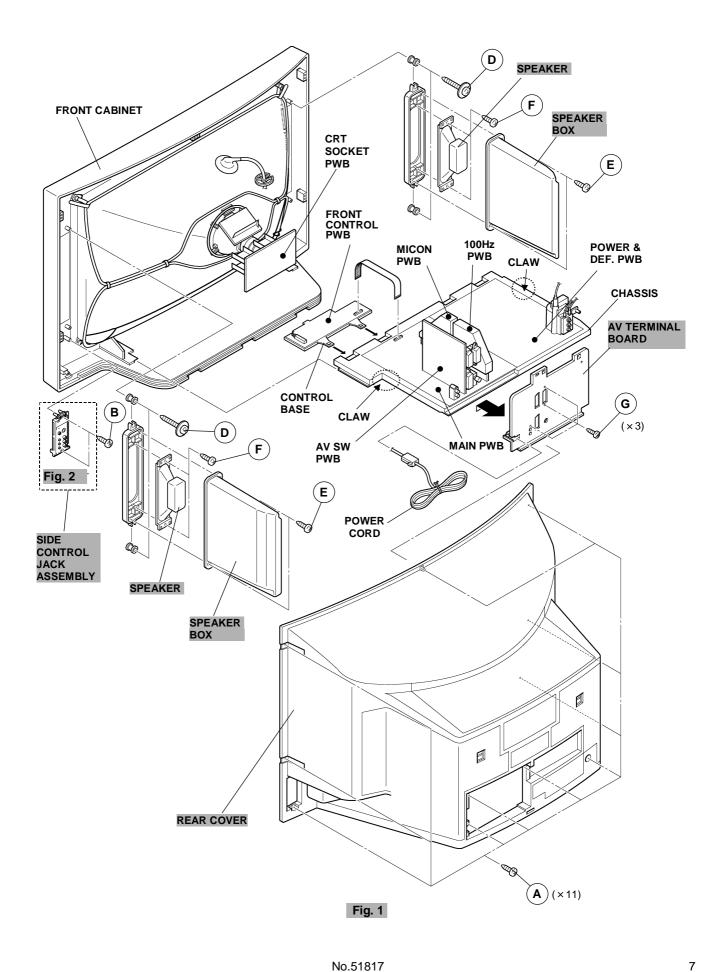


Fig. 2





REMOVING THE CRT

- Replacement of the CRT should be performed by 2 or more persons.
- · After removing the cover, chassis etc.,
- 1. Putting the CRT change table on soft cloth, the CRT change table should also be covered with such soft cloth (shown in Fig.4).
- 2. While keeping the surface of CRT down, mount the TV set on the CRT change table balanced will as shown in Fig.5.
- Remove 4 screws marked by arrows with a box type screw driver as shown in Fig.5.
- Since the cabinet will drop when screws have been removed, be sure to support the cabinet with hands.
- 4. After 4 screws have been removed, put the cabinet slowly on cloth (At this time, be carefully so as not to damage the front surface of the cabinet) shown in Fig.6.
- The CRT should be assembled according to the opposite sequence of its dismounting steps.
- * The CRT change table should preferably be smaller that the CRT surface, and its height be about 35cm.
- * About CRT Spacer

An appropriate CRT spacer should be used in the corresponding CRT in accordance with the type of the CRT.

When a CRT is replaced, special attention should be paid to this matter.

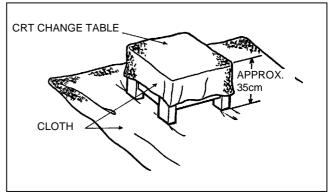


Fig. 4

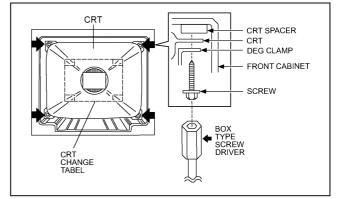
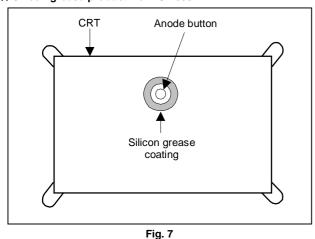


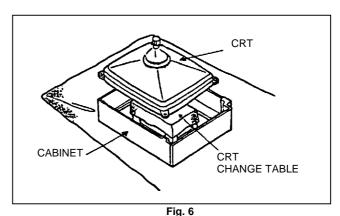
Fig. 5

COATING OF SILICON GREASE FOR ELECTRICAL INSULATION ON THE CRT ANODE CAP SECTION.

 Subsequent to replacement of the CRT and HV transformer or repair of the anode cap, etc. by dismounting them, be sure to coat silicon grease for electrical insulation as shown in Fig.7.
 Wipe around the anode button with clean and dry cloth. (Fig.7)
 Coat silicon grease on the section around the anode button. At this time, take care so that any silicon greases dose not stick to the anode button. (Fig.8)

★ Silicon grease product No. KS - 650N





Approx. Silicon grease 20mm (Do not should be coated coat grease on by 5mm or more this section from the outside diameter of anode cap. Anode button Coating position (No sticking of silicon grease) of silicon grease Anode cap Fig. 8

REPLACEMENT OF MEMORY ICs

1. Memory ICs

This TV use memory ICs. In the memory ICs, there are memorized data for correctly operating the video and deflection circuits. When replacing memory ICs, be sure to use ICs written with the initial values of data.

2. Procedure for replacing memory ICs

PROCEDURE (1) Power off Switch the power off and unplug the power cord from the wall outlet. (2) Replace ICs. Be sure to use memory ICs written with the initial data values. (3) Power on Plug the power cord into the wall outlet and switch the power on.

(4) Check and set SYSTEM CONSTANT SET:

- * It must not adjust without signal.
 - 1) Press the INFORMATION key and the MUTING key of the REMOTE CONTROL UNIT simultaneously.
 - 2) The SERVICE MENU screen of Fig. 1 will be displayed.
 - 3) While the SERVICE MENU is displayed, press the INFORMATION key and MUTING key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed.
 - 4) Check the setting values of the SYSTEM CONSTANT SET of Table 1. If the value is different, select the setting item with the FUNCTION UP/DOWN key, and set the correct value with the FUNCTION -/+ key.
 - 5) Press the MENU(OK) key to memorize the setting value.
 - Press the INFORMATION key twice, and return to the normal screen.

(5) Setting of receive channels

Set the receive channel.

For setting, refer to the OPERATING INSTRUCTIONS.

(6) Setting of SERVICE MENU

Verify the setting items of the **SERVICE MENU** of Table 2, and reset where necessary.

For setting, refer to the SERVICE ADJUSTMENTS.

(7) User settings

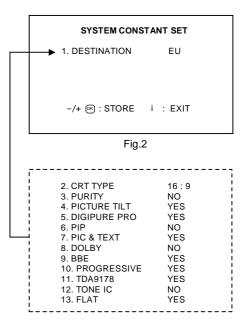
Check the user setting values of Table 3, and if setting value is different, set the correct value.

For setting, refer to the OPERATING INSTRUCTIONS.

SERVICE MENU

1. IF 2. V/C
3. AUDIO 4. DEF
5. VSM PRESET 6. STATUS
7. PIP 8. --9. SHIPPING (OFF) 0. BUS FREE
1-9: SELECT i : EXIT

Fig.1



NAME OF REMOTE CONTROL KEY

Names of key	key	
INFORMATION	(i)	
MUTING	×	
MENU	OK	
FUNCTION UP/DOWN	(A) (*)	
FUNCTION -/+	△ (4)(b) ^{b} ₊	
TV	TV	

SETTING VALUES OF SYSTEM CONSTANT SET (TABLE 1)

Setting item	Setting content	Setting value
1. DESTINATION	EK → EU → EI ─	EU
2. CRT TYPE	→ 16:9 → 4:3	16 : 9
3. PURITY	→ YES → NO ¬	NO
4. PICTURE TILT	→ YES → NO ¬	YES
5. DIGIPURE PRO	→ YES → NO ¬	YES
6. PIP	→1 TUNER → 2 TUNER → NO	NO
7. PIC & TEXT	→ YES → NO ¬	YES
8. DOLBY	→ YES → NO ¬	NO
9. BBE	→ YES → NO ¬	YES
10. PROGRESSIVE	→ YES → NO ¬	YES
11. TDA9178	→ YES → NO ¬	YES
12. TONE IC	→ YES → NO ¬	NO
13. FLAT	→ YES → NO ¬	YES

SERVICE MENU SETTING ITEMS (TABLE 2)

Setting item	Setting value	Setting item	Setting value
1. IF 2. V / C	1. VCO 2. ATT ON / OFF (Do not move) 1. RGB BLK 2. WDR R 3. WDR G 4. WDR B 5. BRIGHT 6. CONTRAST 7. COLOUR 8. HUE 9. SHARP 10. VCO ADJUSTMENT 11. VIDEO AGC 12. SYNC SLICE	5. VSM PRESET COOL NORMAL WARM	1. V-SHIFT 2. V-SIZE 3. H-CENT 4. H-SIZE 5. TRAPEZ 6. EW-PIN 7. COR-PIN 8. COR-UP 9. COR-LO 10. ANGLE 11. BOW 12. V-S.CR 13. V-LIN 1. CONT. 2. BRIGHT 3. SHARP 4. COLOUR 5. HUE 6. WDR R 7. WDR G 8. WDR B
3. AUDIO (Do not adjust)	1. ERR LIMIT 2. A2 ID THR	6. STATUS (Do not adjust)	VPS PDC

USER SETTING VALUES (TABLE 3)

Setting item	Setting value	Setting item	Setting value	
SUB POWER	ON	VOLUME	Appropriate sound volume	
SHIPPING CHANNEL	PR1	DISPLAY	INDICATED	
PRESET CHANNEL	See ; OPERATING INSTRUCTIONS.	ZOOM MODE	PANORAMIC	
PICTUI	RE SETTING	EXT	SETTING	
TINT	COOL	ID	BLANK	
CONTRAST	REFER to VSM PRESET	S-IN	BLANK	
BRIGHT	REFER to VSM PRESET	DUBBING	EXT-1→EXT-2	
SHARP	REFER to VSM PRESET			
COLOUR	REFER to VSM PRESET			
ECO MODE	OFF			
PICTUR	E FEATURES	FEATURES		
DIGITAL VNR	AUTO	SLEEP TIMER	OFF	
DIGIPURE PRO	AUTO	BLUE BLACK	ON	
COLOUR SYSTEM	TV : According to preset CH	CHILD LOCK	ID : No.0000, ALL CH : OFF	
	EXT : AUTO	DECODER (EXT-2)	ALL CH : OFF	
AUTO ASPECT	PANORAMIC			
SOUN	D SETTING	INSTALL		
BASS	CENTER	LANGUAGE	ENGLISH	
TREBLE	CENTER	EDIT	PR CHANNEL only	
BALANCE	CENTER		The others : BLANK	
TV SPEAKER	L/R			
HYPER SOUND	OFF			
BBE	ON			

SERVICE ADJUSTMENTS

BEFORE STARTING SERVICE ADJUSTMENT

- There are 2 ways of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.
- The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
- Make sure that connection is correctly made to AC power source.
- 4. Turn on the power of the TV and measuring instrument for warming up for at least 30 minutes before starting adjustment.
- 5. If the receive or input signal is not specified, use the most appropriate signal for adjustment.
- Never touch parts (such as variable resistors, transformers and condensers) not shown in the adjustment items of this service adjustment.

Preparation for adjustment (presetting):
 Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT:

Setting position

PICTURE MODE (VSM)	NORMAL
SLEEP TIMER	OFF
TONE BALANCE	CENTER
ECO MODE	OFF
ZOOM	PANORAMIC

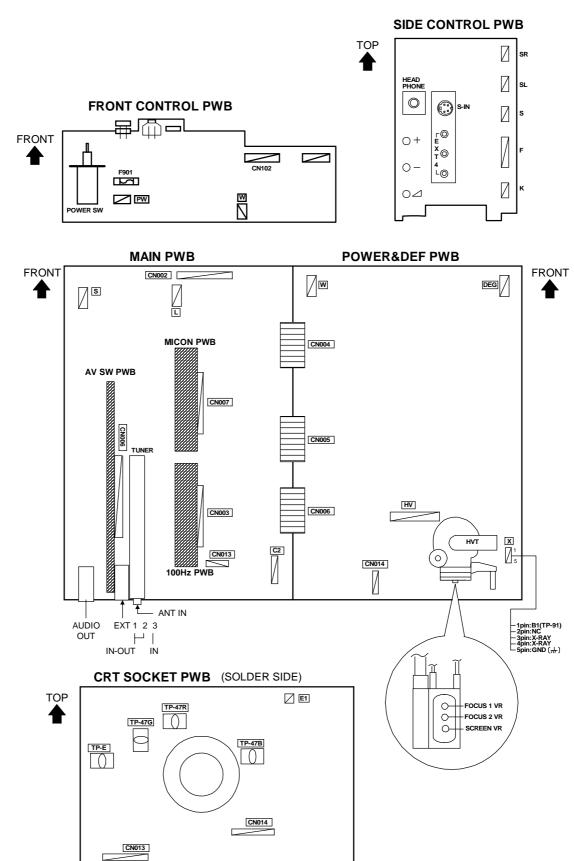
MEASURING INSTRUMENT AND FIXTURES

- 1. DC voltmeter (or digital voltmeter)
- 2. Oscilloscope
- 3. Signal generator (Pattern generator) [PAL / SECAM / NTSC]
- 4. Remote control unit

ADJUSTMENT ITEMS

- Checking items.
- Adjustment of FOCUS & SCREEN
- VSM preset setting.
- VIDEO / CHROMA circuit adjustment.
- DEFLECTION circuit adjustment.
- AUDIO circuit adjustment. (Do not adjust)

ADJUSTMENT LOCATIONS



BASIC OPERATION SERVICE MENU

1. TOOL OF SERVICE MENU OPERATION

Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

2. SERVICE MENU ITEMS

With the SERVICE MENU, various settings (adjustments) can be made, and they are broadly classified in the following items of settings (adjustments):

(1) **1. IF** This mode adjusts the setting values of the IF circuit.

(2) 2.V/C · · · · · This mode adjusts the setting values of the VIDEO / CHROMA circuit.

(3) **3.AUDIO** · · · · · This mode adjusts the setting values of the multiplicity SOUND circuit.

(4) **4.DEF** This mode adjusts the setting values of the DEFLECTION circuit for each aspect mode given below.

ASPECT	V. FREQ.
FULL	100Hzi / 60HzP
PANORAMIC	1
SUBTITLE	1
COMPRESS (Fixed value)	100Hzi / 120Hzi

(5) **5.VSM PRESET**······ This mode adjusts the initial setting values of COOL,NOMAL and WARM. (VSM: Video Status Memory)

3. BASIC OPERATION OF SERVICE MENU

(1) How to enter SERVICE MENU

Press the INFORMATION key and the MUTING key of the REMOTE CONTROL UNIT simultaneously, and the SERVICE MENU screen of Fig. 1 will be displayed.

SERVICE MENU

SERVICE MENU

1. IF 2. V/C 3. AUDIO 4. DEF 5. VSM PRESET 6. STATUS 7. PIP 8. ---

9. SHIPPING (OFF) 0. BUS FREE

1-9: SELECT i : EXIT

Fig.1

(2) Selection of SUB MENU SCREEN

Press one of keys 1~5 of the REMOTE CONTROL UNIT and select the SUB MENU SCREEN (See Fig. 3), form the SERVICE MENU.

DO not

work

SERVICE MENU → SUB MENU

- 1. IF
- 2. V / C
- 3. AUDIO
- 4. DEF.
- 5. VSM PRESET

6. STATUS

7. PIP

8. - - -

9. SHIPPING (OFF)

0. BUSS FREE

NAME OF REMOTE CONTROL KEY

Names of key	key
INFORMATION	Û
MUTING	×
MENU	OK
FUNCTION UP/DOWN	(A) (*)
FUNCTION -/+	△ (•)(•) ⁺
TV	TV

Fig.2

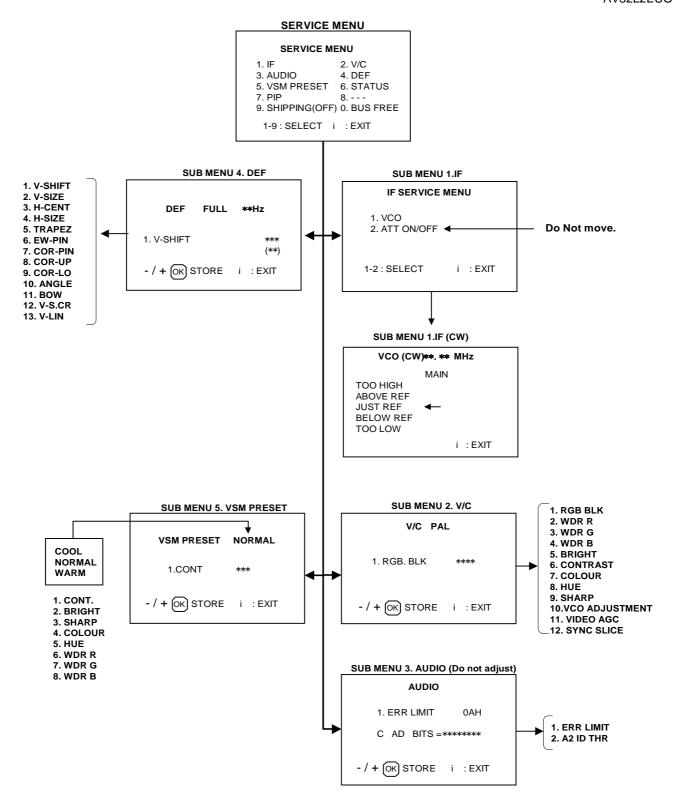


Fig. 3 SUB MENU SCREEN

AV32L2EUGR AV32L2EUBL AV32L2EUGY

(3) Method of Setting

[VCO] $\cdots\cdots *$ It must not adjust without signal.

- ① 1 Key····· Select 1.IF.
- ② 1 Key Select 1. VCO (CW)

Check the arrow position between ABOVE REF. and BELOW REF.

③ INFORMATION (i)) Key · · · · · Return to the SERVICE MENU screen.

• Method of setting 2.V/C, 3.AUDIO, 4.DEF and 5.VSM PRESET.

- ① 2~5 Key····· Select one from 2. V/C, 3. AUDIO, 4. DEF and 5. VSM PRESET.
- 2 FUNCTION UP/DOWN Key \cdots Select setting items.
- ③ FUNCTION -/+----- Set (adjust) the setting values of the setting items.
- MENU (OK) Key Memorize the setting value.
 (Before storing the setting values in memory, do not press the CH, TV, POWER ON / OFF key if you do, the values will not be stored in memory.)
- ⑤ INFORMATION ((i)) Key · · · · · Return to the **SERVICE MENU** screen.
- Can not setting 6. STATUS, 7. PIP, 8. ---, 9. SHIPPING(OFF) & 0. BUS FREE.

(4) Release of SERVICE MENU

1) After completing the setting, return to the SERVICE MENU, then again press the INFORMATION (①) key.

ADJUSTMENT

CHECKING ITEMS

Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 Power Supply	Signal Generator DC voltmeter Remote Control unit	TP-91(B1) TP-E(♣) [X connector on POWER DEF PWB]	1. RGB BLK	 Receive any broadcast. Press the ZOOM key and select the FULL mode. Select 2. V/C from the SERVICE MENU. Select 1. RGB BLK with function UP / DOWN key. Press the function +(∠) key to find the cut off screen (Black screen). Connect a DC voltmeter to TP-91(B1) and TP-E(⊥). Make sure that the voltage is DC139.9 ±2.0V. Press the function – (∠) key to return to service menu.
Check of High Voltage	Signal Generator DC volunteer Remote Control unit	CRT anode Chassis GND	1. RGB BLK	 Receive any broadcast. Press the ZOOM key and select the FULL mode. Select 2. V/C from the SERVICE MENU. Select 1. RGB BLK with function UP / DOWN key. Press the function +(∠) key to find the cut off screen (Black screen). Connect a DC voltmeter to CRT ANODE and chassis GND. Make sure that the voltage is DC 31.0kV -1.5kV. Press the function – (∠) key to return to service menu.
Check of VCO	Remote control unit		1. VCO	 Under normal conditions, no adjustment is required. Confirmation adjustment. Select 1.IF from the SERVICE MENU. Then select 1.VCO from the IF SERVICE MENU.
	IF SERVICE M 1. VCO 2. ATT ON/OFF 1-2: SELECT		(Do not move)	 Receive any broadcast. Check the arrow (←) position between the ABOVE REF. and BELOW REF.
ABC JUS BEL	VCO(CW) MAIN D HIGH DVE REF IT REF OW REF D LOW	 ****MHz i : EXIT		

ADJUSTMENT OF FOCUS & SCREEN

Item	Measuring instrument	Test point	Adjustment part	Description
ŏ-	Signal generator FOCUS 1 VR FOCUS 2 VR SCREEN VR	FOCUS 1 VI	FOCUS 1 VR FOCUS 2 VR [In HVT] R FOCUS 2 VR	 Receive a cross-hatch signal, Select FULL mode By turning the FOCUS 2 VR, adjust the to make the vertical lines as fine and sharp as possible. By turning the FOCUS 2 VR, adjust the picture so that the 5th vertical line from left side of the cross-hatch picture becomes thinnest. By turning the FOCUS 1 VR, adjust the 3rd horizontal line from the upper side may become uniform at the line center and its periphery. Carry out adjustment by repeating the steps 3 and 4 about. Make sure that when the screen is darkened, the lines remain in good focus.
Adjustment of SCREEN	[00000	RE i :EXIT	SCREEN VR [In HVT] CLOW status	 Press a whole black signal . Press the ZOOM key and select the FULL mode. Select 2. V/C from the SERVICE MENU. Rotate the SCREEN VR clockwise from the full counterclockwise position and stop it at the point where "CLOW" status (marked în Fig.) changes from 1 to 0 (which is indicated at the 3rd column from the right.) * "CLOW": control loopout of window.

VSM PRESET ADJUST SETTING

Item		suring rument	Test point	Adjustment p	part		Descrip	tion	
Setting of VSM PRESET	Remo	ote ol unit		1. CONT. 2. BRIGHT 3. SHARP 4. COLOUR 5. HUE 6. WDR R 7. WDR G 8. WDR B	1. 2. 3. 4. 5. 6.	Select 5.VSM PR Select COOL wit Adjust the FUNC values of 1.CON table. Press the MENU Respectively sel WARM, and mal Press the MENU Refer to OPER MODE.	the MENU kee CTION UP/DOV NT.~ 8. WDR I key and memore ect the VSM Processimilar adjustices and memore the weeken with the work of the wor	by of the remote VN and -/+ key B to the valu Drize the set va RESET mode fitment as in 3 a Drize the set va	e control unit. y to bring the se es shown in the ulue. or NORMAL and above. ulue.
VSM p	oreset mode	1.CONT	2.BRIGH	T 3.SHARP	4.COLOU	JR 5.HUE	6.WDR R	7.WDR G	8.WDR B
COOL		+16	0	-12	0	0	-25	-12	0
NORMAL		0	0	-12	0	0	0	0	0
WARM		-13	0	-12	-1	0	+5	0	0
			•	SETTING VAL	UES OF V	SM PRESET	•	•	

VIDEO/CHROMA CIRCUIT ADJUSTMENT

The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

marked ★ :Do not adjust

Colour system	Initial setting value			Colour system	Initi	al setting va	alue
Setting item	PAL	SECAM	NTSC	Setting item	PAL	SECAM	NTSC
1.RGB BLK				7.COLOUR	000	000	000
2.WDR R	000	←	+	8.HUE	_	_	020
3.WDR G	000	←	+	9.SHARP	* +007	←	←
4.WDR B	* -012	←	←	10.VCO ADJUSTMENT		natically opti ter adjustme	
5.BRIGHT	000	←	←	11.VIDEO AGC	* 000	←	←
6.CONTRAST	000	-	←	12.SYNC SLICE	* +007	←	←

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (High-Light)	Signal generator Remote control unit		2.WDR R 3.WDR G	 Set the PICTURE MODE to NORMAL. 1. Receive a black and white signal (colour off). 2. Select 2. V/C from the SERVICE MENU. 3. Modify 2. WDR R and 3.WDR G data to adjust the white balance (high light). 4. Press the MENU key and memorize the set value. 5. Change the contrast and brightness with the remote control up & down from low-light to high-light and check that the tracking of the white balance is good.
Adjustment of SUB BRIGHT	Remote control unit		5.BRIGHT	 Receive any broadcast. Select 2.V/C from the SERVICE MENU. Select 5.BRIGHT with the FUNCTION UP/DOWN key. Set the initial setting value with the FUNCTION -/+ key. If the brightness is not the best with the initial setting value, make fine adjustment until you get the best brightness. Press the MENU key and memorize the set value.
Adjustment Of SUB CONTRAST	Remote control unit		6.CONTRAST	 Receive any broadcast. Select 2.V/C from the SERVICE MENU. Select 6.CONTRAST with the FUNCTION UP/DOWN key. Set the initial setting value with the FUNCTION - or + key. If the contrast is not the best with the initial setting value, make fine adjustment until you get the best contrast. Press the MENU key and memorize the set value.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB	Remote control unit		7.COLOUR (PAL/SECAM/NTSC)	[Method of adjustment without measuring instrument]
COLOUR I			PAL COLOUR	 (PAL COLOUR) Receive PAL broadcast. Select 2.V/C from the SERVICE MENU. Select 7.COLOUR with the FUNCTION UP/DOWN key. Set the initial setting value for PAL COLOUR with the FUNCTION - or + key.
(4)	② ③ ⑤ ⑥	-CH kev		 5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour. 6. Press the MENU key and memorize the set value.
		Jii key	SECAM COLOUR	(SECAM COLOUR) 1. Receive a SECAM broadcast. 2. Make fine adjustment of SECAM COLOUR in the same manner as for above.
	P MENU		NTSC COLOUR	 (NTSC 3.58 COLOUR) Input a NTSC 3.58MHz COMPOSITE VIDEO signal from the EXT terminal. Make similar fine adjustment of NTSC 3.58 COLOUR in the same manner as for above.
	FUNC	TION key		
i)(IN	(i) (INFORMATION) key			(NTSC 4.43 COLOUR) 1. Receive a NTSC 4.43MHz COMPOSITE VIDEO signal from the EXT terminal.
REMO	TE CONTROL K	KEY		Make similar fine adjustment of 4.43 COLOUR in the same manner as for above.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR II	of SUB generator COLOUR II		7.COLOUR (PAL/SECAM/NTSC)	[Method of adjustment using measuring instrument]
	Oscilloscope Remote control unit	PWB]	PAL COLOUR	 (PAL COLOUR) Receive a PAL full field colour bar signal(75% white). Select 2.V/C from the SERVICE MENU. Select 7.COLOUR with the FUNCTION UP/DOWN key. Set the initial setting value of PAL COLOUR with the FUNCTION - or + key. Connect the oscilloscope between TP-47B and TP-E (♣) Adjust PAL COLOUR and bring the value of (A) in the illustration to +5V (voltage difference between white (w) and blue (B)). Press the MENU key and memorize the setting value.
			SECAM COLOUR	 (SECAM COLOUR) Receive a SECAM full field colour bar signal(75% white). Set the initial setting value of SECAM COLOUR with the FUNCTION -/+ key. Adjust SECAM COLOUR and bring the value of (A) of the illustration to +4V(W~B). Press the MENU key and memorize the setting value.
w	W Cy Mg B (+)	(-)	NTSC COLOUR	 (NTSC 3.58 COLOUR) Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. Set the initial setting value of NTSC 3.58 COLOUR with the FUNCTION -/+ key. Adjust NTSC 3.58 COLOUR and bring the value of (A) of the illustration to +11V(W~B). Press the MENU key and memorize the setting value.
				 (NTSC 4.43 COLOUR) Input a NTSC 4.43MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. Set the initial setting value of NTSC 4.43 COLOUR with the FUNCTION -/+ key. Adjust NTSC 4.43 COLOUR and bring the value of (A) of the illustration to +11V(W~B). Press the MENU key and memorize the setting value.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of	Remote control unit		8.HUE	[Method of adjustment without measuring instrument]
SUB HUE I			NTSC 3.58 HUE	 [NTSC 3.58 HUE](NTSC only) Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. Select 2.V/C from the SERVICE MENU. Select 8.HUE with the FUNCTION UP/DOWN key. Set the initial setting value of NTSC 3.58 HUE with the FUNCTION -/+ key. If you cannot get the best hue with the initial setting value, make fine adjustment until you get the best hue. Press the MENU key and memorize the set value.
			NTSC 4.43 HUE	[NTSC 4.43 HUE] 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of	Signal generator	TP-47B TP-E(♣)	8.HUE	[Method of adjustment using measuring instrument]
SUB HUE II		SOCKET	NTSC 3.58 HUE	 Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal. Select 2.V/C from the SERVICE MENU. Select 8.HUE with the FUNCTION UP/DOWN key. Set the initial setting value of NTSC 3.58 HUE with the FUNCTION - or + key. Connect the oscilloscope between TP-47B and TP-E (). Adjust NTSC 3.58 HUE to bring the value of (B) in the illustration to -1V (voltage difference between white (W) and magenta(Mg)). Press the MENU key and memorize the setting value
(B) (-) W Cy Mg B (+)		•	NTSC 4.43 HUE	[NTSC 4.43 HUE] 1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.
Adjustment of VCO for colour decoder	Signal generator Remote control unit		10. VCO	 Input a PAL harf colour bar signal (75% white) from the EXT terminal. Select 2. V/C from the SERVICE MENU. Select 10. VCO adjustment with the FUNCTION UP/DOWN key. Press the OK key then automatically optimized.

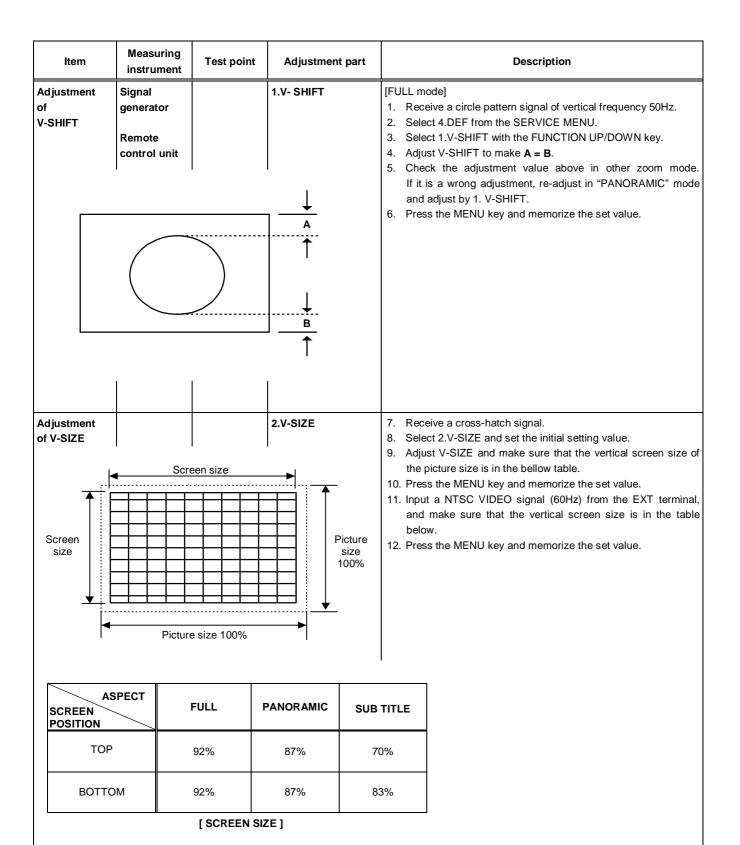
ADJUSTMENT

There are 4 aspect modes (①FULL, ②PANORAMIC, ③SUBTITLE, ④COMPRESS) of the adjustment (1) 100Hz i mode, (2) 60Hz p and (3) 120Hz i mode····· depending upon the kind of signals (vertical frequency 100Hzi / 60HZp / 120Hzi).

- When the 100Hz FULL mode has been established, the setting of other modes will be done automatically. However, if the picture quality has not been optimized, adjust each mode again, respectively.
- The adjustment using the remote control unit is made on the basis of the initial setting values.
- The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

	Initial setting value											
Setting item	FULL		PANORAMIC		SUBTITLE		COMPRESS					
	100Hz i	60Hz p	100Hz i	60Hz p	100Hz i	60Hz p	100Hz i	120Hz i				
1.V- SHIFT	-3	+10	+1	0	+5	0	0	0				
2.V-SIZE	0	+1	0	0	0	0	-15	0				
3.H-CENT	-15	+5	-2	0	0	0	0	0				
4.H-SIZE	-29	-4	-4	0	0	0	0	0				
5.TRAPEZ	-9	+13	+1	0	0	0	0	0				
6.EW-PIN	-17	0	-2	0	-1	0	0	0				
7.COR-PIN	-13	0	-6	0	-2	0	0	0				
8.COR-UP	+7	0	+7	0	+5	0	0	0				
9.COR-LO	+10	0	+10	0	+4	0	0	0				
10.ANGLE	0	0	0	0	0	0	0	0				
11.BOW	0	0	0	0	0	0	0	0				
12.V-S.CR	-17	0	+7	0	+11	0	0	0				
13.V-LIN	-3	0	-11	0	-18	0	0	0				

*Screen tone : Do not move fixed value.



Item	Measuring	Test point	Adjustment part	Description
Adjustment of H.CENTER	signal generator Remote control unit		3.H-CENT.	 13. Receive a circle pattern signal. 14. Select 3.H-CENT and set the initial setting value. 15. Adjust H-CENT to make C=D. 16. Press the MENU key and memorize the set value.
	c		D	
Adjustment of H.SIZE			4.H-SIZE	 17. Receive a cross hatch signal. 18. Select 4.H-SIZE and set the initial setting value. 19. Adjust H-SIZE and make sure that the horizontal screen size of the picture size is in the bellow table. 20. Press the MENU key and memorize the set value. 21. Input a NTSC VIDEO signal (60Hz) from the EXT terminal, and make sure that the horizontal screen size is in the table below. 22. Press the MENU key and memorize the set value.
ASPECT MODE H-SIZE	Fol		ORAMIC SUBTI	
H-SIZE	92	[SCREEN SIZ		
Adjustment of EW-PIN		Straight —	6.EW-PIN	 23. Select 6.EW-PIN and set the initial setting value 24. Adjust EW-PIN and make the 2nd.vertical lines at the left and right edges of the screen straight. Also make sure that the 3rd vertical lines are straight. 25. Press the MENU key and memorize the set value.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of TRAPEZ	ent Signal		5.TRAPEZ	26. Receive a cross-hatch signal. 27. Select 5.TRAPEZ with the FUNCTION UP/DOWN key. 28. Set the initial setting value of TRAPEZ with the FUNCTION or + key. 29. Adjust TRAPEZ and bring the VERTICAL lines at the right and left edges of the screen parallel. 30. Press the MENU key and memorize the set value.
CORNER UP/ LOW	Signal generator Remote control unit		7.COR-PIN 8.COR-UP 9.COR-LO	 31. Select 9.COR-LO with the FUNCTION UP / DOWN key. 32. Set the initial setting value of COR-LO with the FUNCTION – or + key. 33. Adjust COR-LO, and bring the straight line at the low corner. 34. Select 8.COR-UP with the FUNCTION UP / DOWN key. 35. Set the initial setting value of COR-UP with the FUNCTION – or + key. 36. Adjust COR-UP, and bring the straight line at the upper corner. 37. If the extreme upper & lower corners and a little pin or barrel, chose 7.COR-PIN and adjust. And adjust to get the straight. Store the set value.
Adjustment of ANGLE	Signal generator Remote control unit		10.ANGLE	In case where there is a parallelogrammical distortion of images on the screen. (Fig. A) 38. Select 10.ANGLE with the FUNCTION UP / DOWN key. 39. Adjust ANGLE, and bring the VERTICAL lines straight. 40. Press the MENU key and memorize the set value.
			Fig.	. A

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of BOW	Signal generator Remote control unit		11.BOW	 In case where there is a bow-shaped distortion of images on the screen. (Fig.B) 41. Select 11.BOW with the FUNCTION UP/DOWN key. 42. Adjust BOW, and bring the VERTICAL lines straight. 43. Press the MENU key and memorize the set value.
			Fig. B	
			I	
Adjustment of V-S.CR & V.LIN.			12.V-S.CR 13.V-LIN. TOP CENTER BOTTOM	 When the vertical linearity has been deteriorated remarkably, perform the following steps. 44. Receive a cross-hatch signal. 45. Select 13. V-LIN with the FUNCTION UP / DOWN key. 46. Set the initial setting value of 13. V-LIN with the FUNCTION -/+ key. 47. Select 12. V-S.CR. with the FUNCTION UP / DOWN key. 48. Set the initial setting value of 12. V-S.CR. with the FUNCTION -/+ key. 49. Adjust 13. VLIN and 12. V-S.CR. so that the spaces of each line on TOP, CENTER, and BOTTOM become uniform. NOTE: Do not adjust "PANORAMIC" & "SUBTITLE" mode.
				At first the adjustment in 100Hz FULL mode should be done, then the data for the other aspect mode is corrected in the respective value at the same time. And confirm the deflection adjustment initial setting value in 120Hz (NTSC EXT mode) FULL mode. If the adjustment in 100Hz each aspect mode has been done and stored, the data for the same aspect modes in 120Hz is corrected in the respective value. Only the data for the other aspect mode in 120Hz is corrected for itself.

AV32L2EUGR AV32L2EUBL AV32L2EUGY

AUDIO CIRCUIT ADJUSTMENT

• Do not touch **3. AUDIO** adjustment of the SERVICE MENU as it requires no adjustment. If values had changed for the some reason, set the initial values in the following table.

3. AUDIO(Do not adjust)

Setting item	Variable range	fixed value
1. ERR LIMIT	00H∼FFH	ОАН
2. A2 ID THR	00H∼FFH	19H

REPLACEMENT OF CHIP COMPONENT

■ CAUTIONS

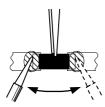
- 1. Avoid heating for more than 3 seconds.
- 2. Do not rub the electrodes and the resist parts of the pattern.
- 3. When removing a chip part, melt the solder adequately.
- 4. Do not reuse a chip part after removing it.

■ SOLDERING IRON

- 1. Use a high insulation soldering iron with a thin pointed end of it.
- 2. A 30w soldering iron is recommended for easily removing parts.

■ REPLACEMENT STEPS

- 1. How to remove Chip parts
- Resistors, capacitors, etc
- (1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

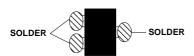


(2) Shift with tweezers and remove the chip part.



◆ Transistors, diodes, variable resistors, etc

(1) Apply extra solder to each lead.



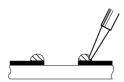
(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.



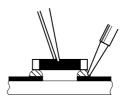
Note: After removing the part, remove remaining solder from the pattern.

2. How to install Chip parts

- Resistors, capacitors, etc
 - (1) Apply solder to the pattern as indicated in the figure.

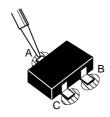


(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

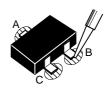


◆ Transistors, diodes, variable resistors, etc

- (1) Apply solder to the pattern as indicated in the figure.
- (2) Grasp the chip part with tweezers and place it on the solder.
- (3) First solder lead A as indicated in the figure.



(4) Then solder leads **B** and **C**.



AV32L2EUGR AV32L2EUBL AV32L2EUGY





VICTOR COMPANY OF JAPAN, LIMITED
HOME AV NETWORK BUSINESS UNIT 12, 3-chome, Moriya-cho, Kanagawa-ku, Yokohama, Kanagawa-prefecture, 221-8528, Japan

JVC

SERVICE MANUAL

COLOUR TELEVISION

AV32L2EUGR AV32L2EUBL AV32L2EUGY

BASIC CHASSIS

MF

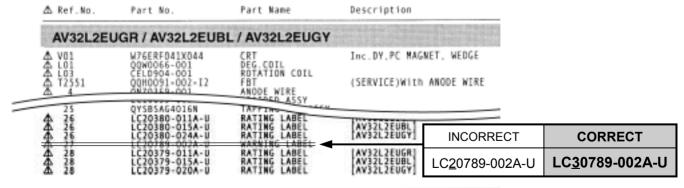
Supplementary

Since some details of the AV32L2EUGR / AV32L2EUBL / AV32L2EUGY SERVICE MANUAL (No.51817, Jun. 2001) are incorrect, we are informing you of these errors and of the new descriptions.

■ CORRECTION

PARTS LIST (Page 34)

EXPLODED VIEW PARTS LIST (2)





ICTOR COMPANY OF JAPAN, LIMITED

HOME AV NETWORK BUSINESS UNIT 12, 3-chome, Moriya-cho, Kanagawa-ku, Yokohama, Kanagawa-prefecture, 221-8528, Japan





AV32L2EU **AV28L2EU** AV32X10EU **AV28X10EU**

ENGLISH DEUTSCH FRANCAIS **NEDERLANDS** CASTELLANO ITALIANO PORTUGUÊS

COLOUR TELEVISION

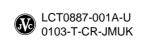
FARBFERNSEHGERÄT TELEVISEUR COULEUR KLEURENTELEVISIE TELEVISOR A COLOR TELEVISORE A COLORI TELEVISOR A CORES

BEDIENUNGSANLEITUNG MANUEL D'INSTRUCTIONS **GEBRUIKSAANWIJZING** MANUAL DE INSTRUCCIONES **ISTRUZIONI**

INSTRUCTIONS

INSTRUÇÕES

InteriArt Natural Vision





Thank you for buying this JVC colour television.

To make sure you understand how to use your new TV, please read this manual thoroughly before you begin.

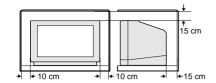
WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:

TO ENSURE PERSONAL SAFETY, OBSERVE THE FOLLOWING RULES REGARDING THE USE OF THIS UNIT.

- 1. Operate only from the power source specified (AC 220 240 V, 50 Hz) on the unit.
- 2. Avoid damaging the AC plug and power cord.
- 3. Avoid improper installation and never position the unit where good ventilation is unattainable.
 - When installing this television, distance recommendations must be maintained between the floor and wall, as well as installation in a tightly enclosed area or piece of furniture. Adhere to the minimum distance guidelines shown for safe operation.



- 4. Do not allow objects or liquid into the cabinet openings.
- 5. In the event of a fault, unplug the unit and call a service technician. Do not attempt to repair it yourself or remove the rear cover.
- 6. The surface of the TV screen is easily damaged. Be very careful with it when handling the TV. Should the TV screen become soiled, wipe it with a soft dry cloth. Never rub it forcefully. Never use any cleaner or detergent on it.
- 7. The main power button on the TV does not fully isolate the TV from the AC supply. If you are not going to use this TV for a long period of time, be sure to disconnect the AC plug from the AC socket.

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PREPARATION

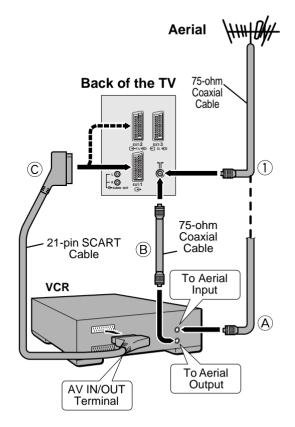
■ Connecting the Aerial and VCR

If connecting a VCR, follow $\textcircled{A} \rightarrow \textcircled{B} \rightarrow \textcircled{C}$. If not connecting a VCR, follow 1.

To operate T-V LINK functions, a T-V LINK compatible VCR must be connected to the EXT-2 terminal on the TV. For details about T-V LINK functions, see "T-V LINK FUNCTIONS" on page 5.

Note:

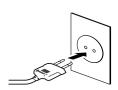
- For further details, refer to the manuals provided with the devices to be connected.
- The connecting cables are not provided.
- A video can be viewed from the VCR without performing ©. For details, refer to your VCR instruction manual.
- To connect additional external devices, please see "AD-DITIONAL PREPARATION" on page 31.
- To connect speakers and amplifier, please see "Connecting Speakers/Amplifier" on page 32.
- When a decoder is connected to a T-V LINK compatible VCR, set the DECODER (EXT-2) function to ON. For details, see "Using the DECODER (EXT-2) function" on page 29. Otherwise, you will not be able to view scrambled channels.



■ Connecting the power cord to the AC outlet

Caution:

• Operate only from the power source specified (AC 220 – 240 V, 50 Hz) on the unit.



■ Putting Batteries into the Remote Control

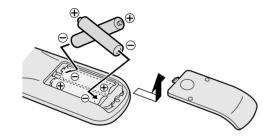
Use two AAA/R03 dry cell batteries.

Insert the batteries from the \ominus end, making sure the \oplus and \ominus polarities are correct.

To open the battery compartment, slide the door downwards and lift off. Replace the door by sliding it upwards until it is secure.

Note:

- Follow the warnings printed on the batteries.
- Battery life is about six months to one year, depending on your frequency of use.
- If the remote control does not work properly, replace the batteries.
- The batteries we supply are only for setting up and testing your TV, please replace them as soon as necessary.
- · Always use good quality batteries.



■ Initial Settings

When the TV is first turned on, it enters the initial setting mode, and the JVC logo is displayed. Follow the instructions on the on-screen display to make the initial settings.

1 Press the Main power button on the TV.

The Power lamp lights red (for power on), then green (for TV on) and the JVC logo is displayed.



Note:

 If the power lamp stays red and does not change to green:

Your TV is in the standby mode. Press the $\circlearrowleft I$ (Standby) button on the remote control to turn your TV on

• The JVC logo does not appear when your TV has been turned on once.

In this case, use the "LANGUAGE" and "AUTO PRO-GRAM" functions to make the initial settings. For details, see "INSTALL" on page 23.

2 Press the OK button.

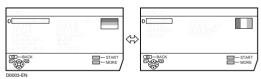
The LANGUAGE menu appears.



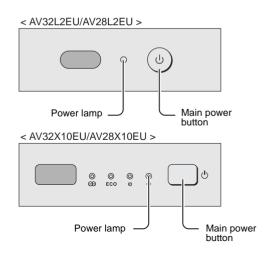
3 Press the ◀/▶ and ▼/▲ buttons to choose ENGLISH. Then press the OK button.

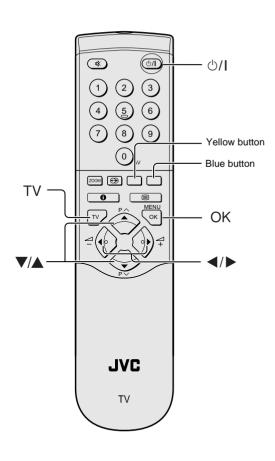
English is set for the on-screen display description. The COUNTRY menu appears as a sub-menu of the AUTO PROGRAM function.

There are two COUNTRY menus. Pressing the yellow button changes the COUNTRY menu as follows:



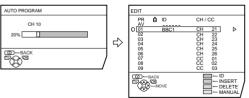
4 Press the
/▶ and ▼/▲ buttons to choose the country where you are now located.





5 Press the blue button to start the AUTO PROGRAM function.

The AUTO PROGRAM menu appears and received TV channels are automatically registered in the Programme numbers (PR).



D0004-FN

If "ACI START/ACI SKIP" appears in the AUTO PRO-GRAM menu:

You can use the ACI (Automatic Channel Installation) function to decode the ACI data and complete the registration of all the TV channels in a short period of time. For details of the ACI function and how to use it, refer to "Using the ACI function" on page 28.

If you don't want to use the ACI function, press the ▼/▲ button to choose ACI SKIP and then press **OK**.

To cancel the AUTO PROGRAM function:

Press the **TV** button.

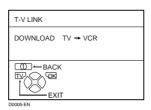
6 After the TV channels have been registered in the Programme numbers (PR), the EDIT menu appears.

You can proceed to edit the Programme numbers (PR) using the EDIT/MANUAL function. For details, see "ED-IT/MANUAL" on page 24.

When not using the EDIT/MANUAL function:

If you do not need to use the EDIT/MANUAL function, go to the next step.

7 Press the OK button to display the T-V LINK menu.



8 Operate the T-V LINK menu according to the type of a VCR connected to the EXT-2 terminal.

When a T-V LINK compatible VCR is not connected:

Press the **TV** button to exit the T-V LINK menu. The T-V LINK menu disappears.

When a T-V LINK compatible VCR is connected:

Follow the operating procedure "Downloading the data to VCR" on page 28 to transmit the Programme number (PR) data.

9 Now, the initial settings are complete, and you can watch the TV.

Note:

- When your TV can detect the TV channel name from the TV channel broadcast signal, it automatically registers the TV channel name (ID) to the Programme number (PR) in which the TV channel has been registered.
- If a TV channel you want to view is not set to a Programme number (PR), manually set it using the MANUAL function. For details, see "EDIT/MANUAL" on page 24.
- The TV channel is not registered in Programme number PR 0 (AV). When you want to register a TV channel to PR 0 (AV), manually set it using the MAN-UAL function. For details, see "EDIT/MANUAL" on page 24.

T-V LINK FUNCTIONS

When a T-V LINK compatible VCR is connected to the EXT-2 Terminal on the TV, it is easier to set up the VCR and to view videos. T-V LINK uses the following features:

To use T-V LINK functions:

A T-V LINK compatible VCR is necessary.
The VCR must be connected to the EXT-2 terminal on the TV by a fully wired SCART cable.

Note:

- A "T-V LINK compatible VCR" means a JVC VCR with the T-V LINK logo or a VCR with one of the following logos. However, these VCRs may support some or all of the features described below. For details, refer to your VCR instruction manual.
 - "Q-LINK" (a trademark of Panasonic Corporation)
 "Data Logic" (a trademark of Metz Corporation)
 - "Easy Link" (a trademark of Phillips Corporation)
 - "Megalogic" (a trademark of Grundig Corporation)
 - "SMARTLINK" (a trademark of Sony Corporation)

■ Pre-set Download

Download the registered data on the TV channels from the TV to the VCR

The Preset Download function automatically begins when the initial setting is complete or whenever the AUTO PROGRAM or EDIT/MANUAL operations are performed.

Note:

• This function can be operated via VCR operation.

When "FEATURE NOT AVAILABLE" is displayed:

If "FEATURE NOT AVAILABLE" is displayed, the download was not performed correctly. Before trying to download again, ensure the following:

- The VCR power is turned on.
- The VCR is T-V LINK compatible.
- The VCR is connected to the EXT-2 terminal.
- The SCART cable is fully wired.

■ Direct Rec

"What You See Is What You Record"

You can record to VCR the images that you are currently viewing on TV by a simple operation.

For details, read the manual for your VCR.

Operate via the VCR. "VCR IS RECORDING" is displayed.

In the following conditions, the VCR will stop recording if the TV is turned off, if the TV channel or input is switched, or if the menu is displayed on the TV:

- When recording images from an external device connected to the TV.
- When recording a TV channel after it has been unscrambled on a decoder.
- When recording a TV channel by using the TV's output because that TV channel cannot be properly received on the VCR's tuner.

Note:

- Operation via the TV is not possible.
- Generally, the VCR cannot record a TV channel that cannot be received properly by the VCR's tuner, even though you can view that TV channel on the TV. However, some VCRs can record a TV channel by using the TV's output if that channel can be viewed on the TV, even though the TV channel cannot be received properly by the VCR's tuner. For details, refer to your VCR instruction manual.

■ TV Auto Power On/VCR Image View

When the VCR starts playing, the TV automatically turns on and the images from EXT-2 terminal are displayed on the screen

When the VCR menu is operated, the TV automatically turns on and the images from EXT-2 terminal are displayed on the screen

Note:

 This function does not operate if your TV's main power is turned off. Set your TV's main power to on (standby mode)

BASIC OPERATION

■ Turn the Main power on

Press the Main power button on the TV.

The Power lamp lights red and your TV is in the standby mode.

Note

If the Power lamp lights green, the TV is already on.

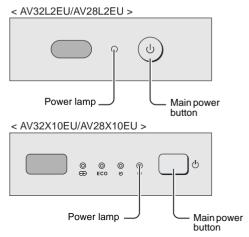
To turn the Main power off:

Press the Main power button again.

The Power lamp goes off.

Caution:

• The main power button on the TV does not fully isolate the TV from the AC supply. If you are not going to use this TV for a long period of time, be sure to disconnect the AC plug from the AC socket.



■ Turn the TV on from standby mode

Press the ⊕/I (Standby) button, the **TV** button, the **V**/▲ buttons or the Number buttons.

The Power lamp lights red to green and your TV will be turned on.

To turn the TV off:

Press the \u00c4/| (standby) button again.

The Power lamp changes from green to red and the TV enters standby mode.

■ Choose a TV channel

Choose a Programme number (PR) in which the desired Programme TV channel has been set.

Use the **▼**/**▲** buttons:

Press the ∇ / Δ buttons to choose the desired Programme number (PR).

Use the Number buttons:

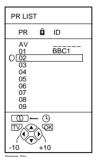
Enter the desired Programme number (PR) with the Number buttons.

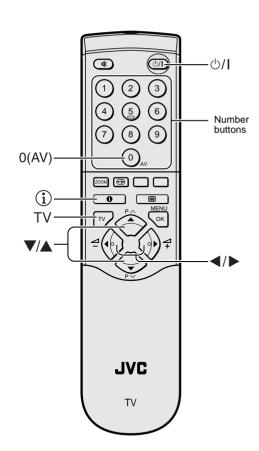
Example

- PR 12 → press **1** and **2**.
- PR $6 \rightarrow press 6$.

Use the PR LIST:

1 Press the (i) (Information) button to display the PR LIST.





2 Press the ◀/▶ and ▼/▲ buttons to choose a Programme number (PR). Then press the OK button.

Note:

- For Programme numbers (PR) with the CHILD LOCK function set, the [↑] (CHILD LOCK) mark is displayed next to the Programme number (PR) in the PR LIST.
- You cannot use the VIA buttons to choose a Programme number (PR) with the CHILD LOCK funtion set
- Even if you try to choose a Programme number (PR) with the CHILD LOCK function set, the the (CHILD LOCK) mark will appear, and you cannot watch the TV channel. To watch the TV channel, see "CHILD LOCK" on page 21.
- If you do not have a clear picture or no colour appears, change the colour system manually. See "COLOUR SYSTEM" on page 17.
- If the picture is tilted, correct it. See "PICTURE TILT" on page 17.

■ Adjust the volume

Press the **◄/▶** buttons to adjust the volume.

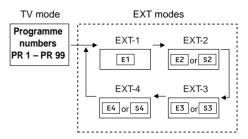
The Volume indicator appears and the volume changes as you press the –/+ buttons.

■ Watch images from external devices

Choose an EXT terminal to which the desired external device has been connected.

Use the O (AV) button:

Press the **0** (AV) button to choose an EXT terminal. Pressing the **0** (AV) button changes the choice as follows:



Use the V/A huttons:

Press the V/▲ buttons to choose an EXT terminal.

Use the PR LIST:

- 1 Press the (i) (Information) button to display the PR LIST.

Note:

- The EXT terminals are registered after the Programme number PR 99.
- You can choose a video input signal from the S-VID-EO signal (Y/C signal) and regular video signal (composite signal). For details, see "S-IN (S-VIDEO input)" on page 19.
- If you do not have a clear picture or no colour appears, change the colour system manually. See "COLOUR SYSTEM" on page 17.
- When choosing an EXT terminal with no input signal, the EXT terminal number becomes fixed on the screen.
- This TV set has a function which can automatically change over the input according to a special signal output from an external device. (The EXT-4 terminal does not support it.)

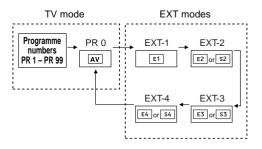
To return to a TV channel:

Press the $\top V$ button, the ∇ / \triangle buttons or the Number buttons.

To use the Programme number PR 0 (AV):

When the TV and VCR are connected only by the Aerial cable, choosing the Programme number PR 0 (AV) allows you to view images from the VCR. Set the VCR RF channel to the Programme number PR 0 (AV) manually. For details, see "EDIT/MANUAL" on page 24.

Pressing the **0 (AV)** button changes the choice as follows:



Note:

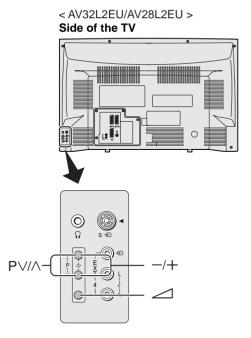
- The VCR RF channel is sent as the RF signal from the VCR.
- Also refer to your VCR instruction manual.

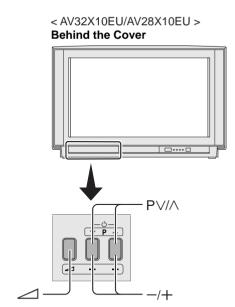
■ Operating with the buttons on the TV

- **1** Press the P ∨/∧ buttons to turn the TV on from standby mode.
- 2 Press the P ∨// buttons to choose a Programme number (PR) or an EXT terminal.
- **3** Press the ∠ (Volume) button and the -/+ buttons to adjust the volume.
 - 1 Press the

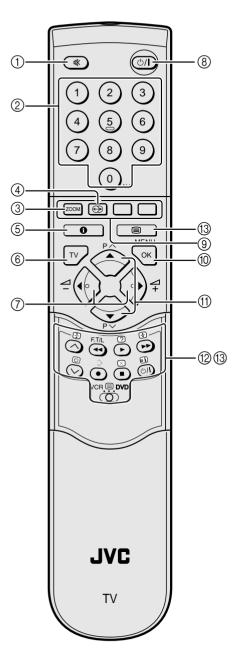
 (Volume) button.

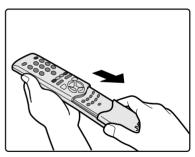
 The volume level indicator appears.
 - 2 Press the -/+ buttons while the volume level indicator is displayed.





REMOTE CONTROL BUTTONS AND FUNCTIONS





1) Muting Button

You can turn the volume off instantly.

Press the ♥ (Muting) button to turn off the Volume. Pressing the ♥ (Muting) button again resumes the previous Volume level.



(2) Number Buttons

You can choose a Programme number (PR) by entering the Programme number.

Example:

- PR 12→ press **1** and **2**.
- PR $6 \rightarrow press 6$.

You can also press the **0 (AV)** button repeatedly to choose an EXT terminal.

3 ZOOM Button

You can change the screen size according to the picture aspect ratio. Choose the optimum one from the following ZOOM modes.

AUTO:

For any picture format except Normal Picture (4:3 Aspect Ratio), the picture will be automatically displayed in the optimum screen size

For Normal Picture (4:3 Aspect Ratio), the picture displayed in accordance with the ZOOM mode set on the 4:3 AUTO ASPECT menu. For details, see "4:3 AUTO ASPECT" on page 17.

Note:

- AUTO may not function properly with poor signal quality.

 In this case, choose an optimum ZOOM mode manually.
- This TV supports WSS (wide-screen signals). When broadcasts with WSS are received with the ZOOM mode set at AUTO, the most suitable ZOOM mode is automatically chosen according to the WSS received.

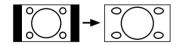
REGULAR:

Use to view a normal picture (4:3 aspect ratio) as its original size is.



PANORAMIC:

This mode stretches the left and right sides of a normal picture (4:3 Aspect Ratio) to fill the screen, without making the picture appear unnatural.



Note:

The top and bottom of the picture are slightly cut off.

14:9 ZOOM:

This mode zooms up the Wide Picture (14:9 Aspect Ratio) to the upper and lower limits of the screen.



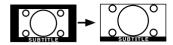
16.9 ZOOM:

This mode zooms up the Wide Picture (16:9 Aspect Ratio) to the full screen.



16:9 ZOOM SUBTITLE:

This mode zooms up the Wide Picture (16:9 Aspect Ratio) with subtitles to the full screen.



FULL:

This mode uniformly stretches the left and right sides of a normal picture (4:3 aspect ratio) to fill the wide TV screen.

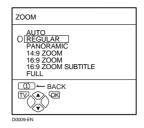


Note:

 Use for pictures with a 16:9 aspect ratio that have been squeezed into a normal picture (4:3 aspect ratio), you can restore their original dimensions.

Choose the ZOOM mode

1 Press the ZOOM button to display the ZOOM menu.



2 Press the V/▲ buttons to choose a ZOOM mode. Then press the OK button.

The picture expands and the chosen ZOOM mode is displayed in about 5 seconds.

Note:

 The ZOOM mode may be automatically changed due to the control signal from an external device.
 When you want to return to the previous ZOOM mode, choose the ZOOM mode again.

Adjusting the visible area of the picture

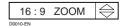
If subtitles or the top (or bottom) of the picture are cut off, adjust the visible area of the picture manually.

1 Press the ZOOM button.

The ZOOM menu appears.

2 Press the OK button to display the ZOOM mode indication.

Indicator is displayed.



3 While it is displayed, press the ▼/▲ buttons to adjust the visible area vertically.

Note:

 You cannot adjust the visible area in REGULAR or FULL mode.

(4) HYPER SOUND Button

You can enjoy sounds with a wider ambience.

Press the (**) (HYPER SOUND) button to turn the HYPER SOUND function on or off.

Note:

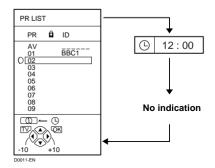
- The HYPER SOUND function does not work properly with mono sound.
- The HYPER SOUND function can be also turned on or off by using the SOUND SETTING menu. For details, see "HYPER SOUND" on page 18.

(5) Information Button

You can display the PR LIST or the Current Time on the screen.

Press the (i) (Information) button.

Pressing the (i) (Information) button changes the display as follows:



Note:

- You can choose Programme numbers (PR) or EXT terminals with the PR LIST. For details, see "Use the PR LIST:" on page 6.
- This TV uses teletext data to set the current time. If the TV
 has not received a TV channel that has teletext programmes since it was turned on, the time display is blank.
 To view the current time, choose a TV channel that has
 teletext programmes. The time will still be displayed as
 long as you do not turn off the TV, even if you choose other TV channels.
- When watching videos, an incorrect current time is sometimes displayed.
- The ① (Information) button is also used to operate menus. For details, see "MENU OPERATION" on page 14.

6 TV Button

You can return to a TV channel instantly.

Press the TV button.

The TV returns to the TV mode and a TV channel appears.

Note:

 The TV button is also used to operate menus. For details, see "MENU OPERATION" on page 14.

(7) **◄/▶** Buttons

You can adjust the volume.

Press the **◄/▶** buttons to adjust the sound.

Note:

The ◀/▶ buttons are also used to operate menus. For details, see "MENU OPERATION" on page 14.

8 Standby Button

Press the $\bigcirc/|$ (Standby) button to turn the TV on or off.

When the TV is turned on, the power lamp changes from red to green.

(9) Colour Buttons

The colour buttons are used for the teletext operations or the menu operations. For details, see "③ Teletext Control Buttons and VCR ⑤ DVD Switch" on page 12 or "MENU OPERATION" on page 14.

(10) OK Button

The **OK** button is used to operate menus. For details, see "MENU OPERATION" on page 14.

11 ▼/▲ Buttons

You can choose a Programme number (PR) or an EXT terminal

Press the ▼/▲ buttons to choose an Programme number (PR) or an EXT terminal.

The ▼/▲ buttons are also used to operate menus. For details, see "MENU OPERATION" on page 14.

These buttons can be used to operate a JVC brand VCR or DVD player. Pressing the button having the same appearance as the original remote control button of a device makes the function work in the same way as the original remote control.

1 Set the VCR DVD Switch to the VCR or DVD position.

VCR:

When you are operating the VCR, set the switch to the VCR position.

-חעח

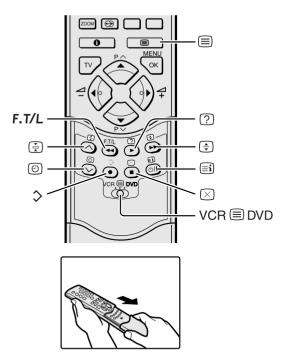
When you are operating the DVD player, set the switch to the DVD position.

2 Press the VCR/DVD Control Button to control your VCR or DVD player.

Note:

- If your device is not made by JVC, these buttons cannot be used.
- Even if your device is made by JVC, some of these buttons or any one of the buttons may not work, depending on the device.
- You can use the VIA buttons to choose a TV channel. The VCR will receive or choose the chapter the DVD player plays back.
- Some DVD player models use the VI∧ buttons for both operating of Fast forward/backward functions and choosing the chapter. In this case, the ◄◄/▶► the buttons do not work.

■ 13 Teletext Control Buttons and VCR 🗐 DVD Switch



Basic operation

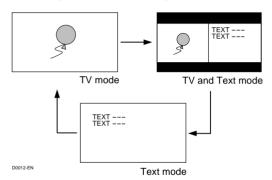
You can view three types of teletext broadcasts on the TV: FLOF (Fastext), TOP and WST.

- Choose a TV channel with a teletext broadcast.



3 Press (Text) button to display the teletext.

Pressing (Text) button changes the mode as follows:



4 Choose a teletext page by pressing the
▼/▲ buttons, Number buttons or Colour buttons.

To return to the TV mode:

Press the **TV** button or (Text) button.

Note:

- If you have trouble receiving teletext broadcasts, consult your local dealer or the teletext station.
- The ZOOM function will not operate in the TV and text mode or Text mode.
- No menu operations are possible when viewing a teletext programme.
- Language display depends on the country which was set on the COUNTRY menu. If characters on a Teletext programme do not appear properly, change the COUNTRY Setting to other country's. For detail, "Changing the COUNTRY setting" on page 28.

Using the List Mode

You can store the numbers of your favourite teletext pages in memory and call them up quickly using the colour buttons.

To store the page numbers:

1 Press F.T/L button to engage the List mode.

The stored page numbers are displayed at the bottom of the screen.

2 Press a Colour button to choose a position. Then press the Number buttons to enter the page number.



3 Press and hold down \diamondsuit (Store) button.

The four page numbers blink white to indicate that they are stored in memory.

To call up a stored page:

- 1 Press the F.T/L button to engage the List mode.
- 2 Press a colour button to which a page has been assigned.



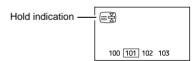
To exit the List mode:

Press the F.T/L button again.

Hold

You can hold a teletext page on the screen for as long as you want, even while several other teletext pages are being received

Press the ((Hold) button.



To cancel the Hold function:

Press (Hold) button again.

Sub-page

Some teletext pages include sub-pages that are automatically displayed.

You can hold any sub-page, or view it at any time.

1 Press the (a) (Sub-page) button to operate the Sub-page function.

Sub-page numbers are displayed at the left of the screen.

Colour*	Meaning of sub-page number
Yellow	Currently being displayed.
White	Can be displayed.
Blue or Red	Cannot be displayed and it is not sent.

^{*:} Background color of the sub-page number.

2 Press the **▼**/**▲** buttons to choose a subpage number.

To cancel the Sub-page function:

Press the (Sub-page) button again.

Reveal

Some teletext pages include hidden text (such as answers to a quiz).

You can display the hidden text.

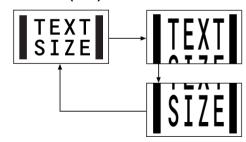
Each time you press the ② (Reveal) button, text is hidden or revealed.



Size

You can double the height of the teletext display.

Press the (\$) (size) button.



Index

You can return to the index page instantly.

Press (Index) button.

FLOF (Fastext)/TOP/WST:

Returns to page 100 or a previously specified page.

List mode:

Returns to the page number displayed in the lower left area of the screen.

Cancel

You can search for a teletext page while watching TV.

1 Press the Number button to enter a page number, or press a Colour button.

The TV searches for a teletext page.

2 Press ⊠ (Cancel) button.

The TV programme appears. When the TV finds the teletext page, its page number appears in the upper left of the screen.

3 Press ⋈ (Cancel) button to return to a teletext page when the page number is on the screen.

Note:

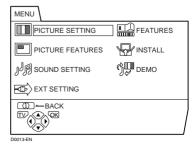
 The TV mode cannot be resumed even by pressing the ⋈ (Cancel) button. A TV programme is temporarily displayed instead of the teletext programme.

MENU OPERATION

This TV has a number of functions you can operate using menus. To fully utilize all your TV's functions, you need to understand the basic menu operating techniques fully.

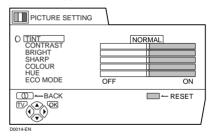
1 Press the OK button to display the MENU (main menu).

The MENU (main menu) appears. In it, the titles of the menus are displayed.



2 Press the ▼/▲ buttons to choose a menu title, and press the OK button.

The menu appears.



3 Operate the menus according to the operation description of each function.

Note:

- For details, refer to the operation descriptions of each function described for each menu which follows this "MENU OPERATION".
- The display appearing at the bottom of a menu indicates a button on the remote controller you can use when you operate a chosen function.

4 Press OK button to complete the setting.

The menu disappears.

To return to the previous menu:

Press (i) (information) button.

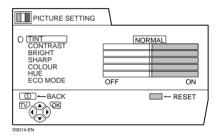
To exit a menu instantly:

Press the TV button.

Note:

• When watching the television with the NTSC system, the menus are displayed at about half of their normal vertical size.

PICTURE SETTING



To display the PICTURE SETTING menu:

- 1 Press the **OK** button to display MENU (main menu).
- 2 Press the V/▲ button to choose PICTURE SETTING, and press the OK button.

TINT

You can select one of three TINT modes (three kinds of picture settings) to adjust the picture settings automatically.

- 1 Press the V/▲ buttons to choose TINT.
- 2 Press **◄/▶** buttons to choose a mode.

COOL:

A cool white colour base with a boost in the colour and contrast levels that creates a more vivid picture.

WARM:

A warm orange/red colour base that creates the appropriate colour and contrast levels for watching films.

NORMAL:

A normal white colour base with normal colour and contrast levels

3 Press the OK button to complete the setting.

The menu disappears.

■ Picture Adjustment

You can change the picture settings of each TINT mode as you like.

The picture settings changed are stored in the TINT mode.

- 1 Press the V/▲ buttons to choose an item.
- 2 Press the ◀/▶ buttons to change the setting.

◄	Item	•
Lower	CONTRAST (picture contrast)	Higher
Darker	BRIGHT (picture brightness)	Brighter
Softer	SHARP (picture sharpness)	Sharper
Lighter	COLOUR (picture colour)	Deeper
Reddish	HUE (picture hue)	Greenish

Note:

 You can change the HUE setting (picture hue) only when the colour system is NTSC 3.58 or NTSC 4.43.

To return to the default settings in each TINT mode:

Press the blue button.

Returns the picture settings in the currently chosen TINT mode to the default settings, and stores them in the TINT mode again.

3 Press the OK button to complete the settings.

The menu disappears.

■ ECO MODE

When you set the ECO MODE function to ON, the screen contrast is automatically adjusted to a setting suitable for the brightness of your room. This reduces eye strain for you and the power consumption of the TV.

- 1 Press V/A buttons to choose ECO MODE.
- 2 Press **◄/▶** buttons to choose ON.

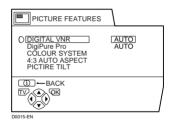
To cancel the ECO MODE function:

Press
√ buttons to choose OFF.

3 Press the OK button to complete the setting.

The menu disappears.

PICTURE FEATURES



To display the PICTURE FEATURES menu:

- 1 Press the OK button to display MENU (main menu).
- 2 Press the ▼/▲ button to choose PICTURE FEATURES, and press the OK button.

■ DIGITAL VNR

The DIGITAL VNR function cuts down the amount of noise in the original picture.

You can choose from the three DIGITAL VNR function settings of AUTO, MIN and MAX.

Note:

- If you set the DIGITAL VNR effect too high it can make the picture less sharp. It is recommended to use the AUTO setting if you can.
- 1 Press the ▼/▲ buttons to choose DIGITAL VNR
- 2 Press the **◄/▶** buttons to choose a setting.

AUTO:

The TV will automatically adjust the level of the DIGITAL VNR effect to match the amount of noise in the picture, giving you the best possible picture.

мім.

The level of the DIGITAL VNR effect is set to the minimum. If you set the DIGITAL VNR function to AUTO but feel that the sharpness of the original picture has not been reproduced fully, change the setting from AUTO to MIN

 The MIN setting is not suitable for low-quality pictures which contain a lot of noise.

MAX:

The level of the DIGITAL VNR effect is set to the maximum. If you set the DIGITAL VNR function to AUTO but still notice some noise, change the setting from AUTO to MAX.

- The MAX setting is not suitable for high-quality pictures which contain very little noise.
- 3 Press the OK button to complete the setting.

The menu disappears.

■ DigiPure Pro

The DigiPure Pro function uses the latest in digital technology to give you a natural looking picture. The DigiPure Pro function includes the following two functions.

DigiPure function:

This function helps to create a natural looking picture by eliminating unnecessary edges from high-contrast and crisp images. Conversely, for images with low-contrast, edges are added to produce a sharper, more detailed picture.

You can choose from the three DigiPure function settings of AUTO, MIN and MAX.

Note:

 If you set the DigiPure effect too high on a low-quality picture that contains a lot of noise, this may actually make the noise worse. It is recommended to use the AUTO setting if you can.

Picture motion compensation function:

This function displays fast moving pictures (for example, the players or ball in a football game) more smoothly and naturally on the screen.

Note:

- The effect level of the picture motion compensation function cannot be changed. The effect level is the same no matter which of the AUTO, MIN or MAX settings is used.
 - 1 Press the V/▲ buttons to choose DigiPure Pro.
- 2 Press the **◄/▶** buttons to choose a setting.

The TV will automatically adjust the level of the DigiPure effect to match the amount of noise in the picture, giving the best possible picture.

MIN.

The level of DigiPure effect is set to the minimum. When you set the DigiPure Pro function to AUTO and notice some noise, change the setting from AUTO to MIN.

• The MIN setting is not suitable for high-quality pictures which contain very little noise.

MAX:

The level of DigiPure effect is set to the maximum. If you set the DigiPure Pro function to AUTO but feel that the original picture quality has not been reproduced fully, change the setting from AUTO to MAX.

• The MAX setting is not suitable for low-quality pictures which contain a lot of noise.

OFF

The DigiPure Pro function is turned off.

3 Press the OK button to complete the setting.

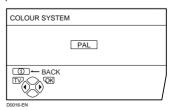
The menu disappers.

■ COLOUR SYSTEM

The colour system is chosen automatically. However, if the picture is not clear or no colour appears, choose the colour system manually.

1 Press the V/▲ buttons to choose COLOUR SYSTEM. Then press the OK button.

The Sub-menu of the COLOUR SYSTEM function appears.



2 Press the **◄/▶** buttons to choose the appropriate colour system.

PAL:

PAL system

SECAM:

SECAM system

NTSC 3.58:

NTSC 3.58 MHz system

NTSC 4.43:

NTSC 4.43 MHz system

AUTO:

This function detects a colour system from the input signal. Only when you are viewing a picture from Programme number PR 0 (AV), or EXT terminal, you can choose using the AUTO function.

3 Press the OK button to complete the setting.

The menu disappears.

Note:

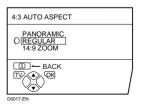
- The AUTO function may not function properly if you have poor signal quality. If the picture is abnormal in the AUTO function, choose another colour system manually.
- When in the Programme numbers PR 0 (AV) to PR 99, you cannot choose NTSC 3.58 or NTSC 4.43.

■ 4:3 AUTO ASPECT

You can choose one of three ZOOM modes, REGULAR, PANORAMIC or 14:9 ZOOM, as the ZOOM mode for the normal picture (4:3 aspect ratio).

1 Press the V/▲ buttons to choose 4:3 AUTO ASPECT. Then press the OK button.

The Sub-menu of the 4:3 AUTO ASPECT function appears



- 2 Press the V/▲ buttons to choose a ZOOM mode.
- 3 Press the OK button to complete the settings.

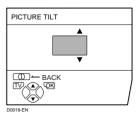
The menu disappears.

■ PICTURE TILT

There are cases where the Earth's magnetic force may make the picture tilt. If this happens, you can correct the picture tilt.

1 Press the ▼/▲ buttons to choose PICTURE TILT. Then press the OK button.

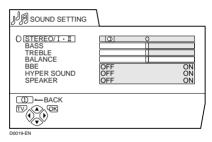
The Sub-menu of the PICTURE TILT function appears.



- 2 Press the ▼/▲ buttons until the picture becomes level.
- 3 Press the OK button to complete the setting.

The menu disappears.

SOUND SETTING



To display the SOUND SETTING menu:

- 1 Press the OK button to display MENU (main menu).
- 2 Press the ▼/▲ button to choose SOUND SETTING. Then press the OK button.

■ STEREO / I•II

When you are viewing a bilingual broadcast programme, you can choose the sound from Bilingual I (Sub I) or Bilingual II (Sub II). When the stereo broadcasting is received poorly, you can change from stereo to mono sound so that you can hear the broadcast more clearly and easily.

- 1 Press the ▼/▲ buttons to choose STEREO / I II.
- 2 Press the ◀/▶ buttons to choose a sound mode.

○ : Stereo sound○ : mono soundI : Bilingual I (sub I)II : Bilingual II (sub II)

3 Press the OK button to complete the setting.

The menu disappears.

Note:

- The sound mode you can choose differs depending on the TV programme.
- This function does not work in the EXT modes. And this function does not appear in the SOUND SET-TING menu

■ Sound Adjustment

You can adjust the sound to your liking.

- 1 Press the V/▲ buttons to choose an item.
- 2 Press the **◄/▶** buttons to adjust it.

◀	Item	>
Weaker	BASS	Stronger
Weaker	TREBLE	Stronger
Left	BALANCE	Right

Press the OK button to complete the setting.

■ SPEAKER

You can turn off the sound from the TV speakers; but you should only do this if an audio system is connected to the TV as a substitute for the TV speakers. When you are using this function, see "Setting the SPEAKER function" on page 30.

When a sound is not issued from the TV speaker:

If the SPEAKER function is set to OFF, the TV speaker does not issue sound. Press the V/▲ buttons to choose the SPEAKER. Then press the ✓/▶ buttons to choose ON.

■ BBE

You can use the BBE function to enjoy easy-to-listen sound that is faithful to the original sound recorded.

- 1 Press the V/▲ buttons to choose BBE.
- 2 Press the **◄/▶** buttons to choose ON.

To cancel the BBE function:

Press the **◄/▶** buttons to choose OFF.

3 Press the OK button to complete the setting.

The menu disappears.

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■ HYPER SOUND

You can enjoy sounds with a wider ambience.

- 1 Press the ▼/▲ buttons to choose HYPER SOUND.
- 2 Press the **◄/▶** buttons to choose ON.

To cancel the HYPER SOUND function:

Press the ◄/▶ buttons to choose OFF.

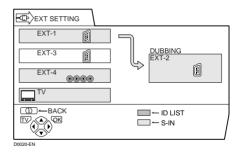
3 Press the OK button to complete the setting.

The menu disappears.

Note:

- The HYPER SOUND function does not work properly with mono sound.
- You can turn on or off the HYPER SOUND function with a single press. For details, see "4" HYPER SOUND Button" on page 10.

EXT SETTING



To display EXT SETTING menu:

- 1 Press the **OK** button to display MENU (main menu).
- 2 Press the V/▲ button to choose EXT SET-TING. Then press the OK button.

■ S-IN (S-VIDEO input)

When connecting a device (such as S-VHS VCR) which enables an S-VIDEO signal (Y/C signal) to be output, you can enjoy high-quality picture of the S-VIDEO signal (Y/C signal).

Preparation:

- At first, read the Device Instruction Manual and "ADDITION-AL PREPARATION" on page 31 to connect the device to the TV properly. Second, follow the Device Instruction Manual to set the device so that a S-VIDEO signal (Y/C signal) can be output to the TV.
- Do not set S-IN (S-VIDEO input) to the EXT terminal connected to a device which cannot output a S-VIDEO (Y/C signal). If it is set wrongly, a picture cannot appear.
- 1 Press the ▼/▲ buttons or ◀/▶ buttons to choose an EXT terminal.
- 2 Press the yellow button and set the S-IN (S-VIDEO input).

A SED (S-VIDEO input) mark is displayed. You can view an S-VIDEO signal (Y/C signal) instead of the regular video signal (composite signal).

To cancel the S-IN (S-VIDEO input) setting:

Press the yellow button and turn off **\$** (S-VIDEO input) mark. The regular video signal (composite signal) pictures are resumed.

3 Press the OK button to complete the setting.

The menu disappears.

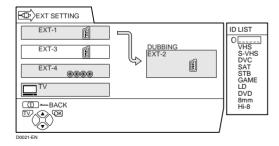
Note:

- The EXT-1 terminal does not support S-VIDEO signal (Y/C signal) and you cannot set S-IN (S-VIDEO input) in the EXT-1 terminal.
- Setting S-IN (S-VIDEO input) changes the head character from "E" to "S". For example, "E2" is changed to "S2".
- Even an device which enables the S-VIDEO signal (Y/ C signal) to be output may output a regular video signal (composite signal) depending on the device setting. If a picture cannot appear because S-IN (S-VIDEO input) setting has been made, read the device Instruction Manual carefully again to check for the device settings.

■ ID LIST

You can have a name corresponding to the devices connected for each EXT terminal. Giving a name to an EXT terminal makes the EXT terminal number appear on the screen, together with the name.

- 1 Press the **▼**/**▲** buttons or **◄**/**▶** buttons to choose an EXT terminal.
- 2 Press the blue button to display the name list (ID LIST).



3 Press the **▼**/**▲** buttons to choose a name. Then press the **OK** button.

The ID LIST disappears and the name is assigned to the EXT terminal.

To erase a name assigned to the EXT terminal: Choose a blank space.

4 Press the OK button to complete the setting.

The menu disappears.

Note:

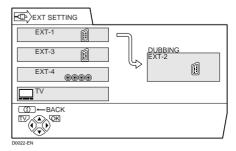
• You cannot assign an EXT terminal name not found in the name list (ID LIST).

DUBBING

You can choose a signal source to be output from an EXT-2 terminal.

You can choose any one of the output signal of the device connected to the EXT terminal and the picture and sound from a TV channel you are currently viewing to output it to the EXT-2 terminal.

1 Press the ◄/► buttons to choose the arrow from the menu.



2 Press the ▼/▲ buttons to choose an EXT terminal or TV.

The arrow in the menu represents a signal flow. The left side of the arrow denotes a signal source output from the EXT-2 terminal.

EXT-1/EXT-3/EXT-4:

The output signal of the device connected to an EXT terminal passes through the TV and is output from the EXT-2 terminal.

TV:

The picture and sound of the TV channel you are currently viewing are output from the EXT-2 terminal.

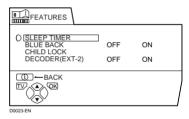
3 Press the OK button to complete the setting.

The menu disappears.

Note

- During dubbing, you cannot turn off the TV. Turning off the TV also turns off the output from the EXT-2 terminal.
- When you choose an EXT terminal as an output, you can view a TV programme or a picture from the other EXT terminal while dubbing the picture from a device connected to the EXT terminal onto a VCR connected to the EXT-2 terminal.
- The RGB signals from the TV games cannot be output. Teletext programmes cannot be output.

FEATURES



To display the FEATURES menu:

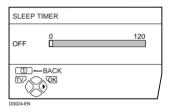
- 1 Press the **OK** button to display MENU (main menu).
- 2 Press the ▼/▲ button to choose FEATURES. Then press the OK button.

■ SLEEP TIMER

You can set the TV to automatically turn off after a specified period of time.

1 Press the V/▲ buttons to choose SLEEP TIMER. Then press the OK button.

A Sub-menu of the SLEEP TIMER function appears.



2 Press the **◄/▶** buttons to set the period of time.

You can set the period of time a maximum of 120 minutes (2 hours) in 10 minute increments.

To cancel the SLEEP TIMER function:

Press the ◀ button to set a period of time to "OFF."

3 Press the OK button to complete the settings.

The menu disappears.

Note:

- One minute before the SLEEP TIMER function turns off the TV, "GOOD NIGHT!" appears.
- The SLEEP TIMER function cannot be used to turn off the TV's main power.
- When the SLEEP TIMER function is on, you can display the Sub-menu of the SLEEP TIMER function again to confirm and/or change the remaining period of time of the SLEEP TIMER function. Press the OK button to exit the menu after confirming and / or changing the remaining time.

■ BLUE BACK

You can set the TV to automatically change to a blue screen and mute the sound if the signal is weak or absent, or when there is no input from an external device.

- 1 Press the ▼/▲ buttons to choose BLUE BACK
- 2 Press the **◄/▶** buttons to choose ON.

To cancel the BLUE BACK function:

Press the ◄/▶ buttons to choose OFF.

Press the OK button to complete the setting.

The menu disappears.

■ CHILD LOCK

When there is a TV channel you wish your children not to watch, you can use the CHILD LOCK function to lock out the TV channel. Even when a child chooses a Programme number (PR) in which a locked TV channel has been registered, the screen will change to blue and displays $\hat{\mathbf{\Omega}}$ (CHILD LOCK) so the TV channel cannot be viewed. Unless you enter a pre-set ID number by a special operation, the lock cannot be released and the child cannot view the TV channel programmes.

To set the CHILD LOCK function

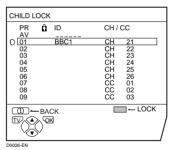
1 Press the **V**/**△** buttons to choose CHILD LOCK. Then press the 0 (AV) button.

"SET ID NO." (ID number setting screen) appears.



- 2 Set the ID number to your liking.
 - 1 Press the **▼**/**▲** buttons to choose a number.
 - 2 Press the ◄/▶ buttons to move the cursor.
- 3 Press the OK button.

The Sub-menu of CHILD LOCK appears.



4 Press the V/▲ buttons to choose a TV channel.

Every time you press the ▼/▲ buttons, the Programme number (PR) changes, and the picture of the TV channel registered in the Programme number (PR) is displayed on the screen

5 Press the blue button and set the CHILD LOCK function.

♠ (CHILD LOCK) appears and the TV channel is locked.

To reset the CHILD LOCK function:

Press the blue button again.

∩ (CHILD LOCK) disappears.

6 Press the OK button to complete the setting.

The menu disappears.

Note:

 To disable easy resetting of the CHILD LOCK function, the menu disappears by choosing the CHILD LOCK function and pressing the OK button as in the ordinary menu operation.

To view a locked TV channel

1 Choose a Programme number (PR) in which a TV channel locked with the Number buttons or PR LIST.

The screen changes to blue and the Ω (CHILD LOCK) appears. You cannot view the TV channel.



2 Press the (i) (Information) button to display "ID NO." (ID NO. input screen).



3 Press the Number buttons to enter the ID number.

The lock is temporarily released so you can view the TV channel.

If you have forgotten the ID number:

Perform step 1 of "To set the CHILD LOCK function". After confirming the ID number, press the **TV** button to exit the menu.

Note:

- Even if you reset the lock temporarily, it does not mean that the CHILD LOCK function set for the TV channel is cancelled. The next time anyone attempts to view the TV channel, it will be locked again
- When you would like to cancel the CHILD LOCK function, you must perform the operation "To set the CHILD LOCK function" again.
- To disable easy choosing of a Programme number (PR) in which a locked TV channel has been registered, the Programme number (PR) has been set that it cannot be chosen by the ▼/▲ buttons or the operation buttons at the TV.
- To disable easy resetting of the lock, "ID NO." (ID NO. input screen) is set so that it cannot appear unless you press the (i) (Information) button.

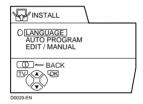
■ DECODER (EXT-2)

Only when connecting a Decoder with a T-V LINK compatible VCR connected to the EXT-2 terminal, you can use this function. To operate this function, see "Using the DECODER (EXT-2) function" on page 29.

Caution:

If you have not connected a Decoder with a T-V LINK compatible VCR connected to the EXT-2 terminal, setting this function to "ON" by mistake causes the picture/sound of a TV channel you are currently viewing not to be issued.

INSTALL



To display the INSTALL menu:

- 1 Press the OK button to display MENU (main menu).
- 2 Press the ▼/▲ button to choose the IN-STALL menu. Then press the OK button.

■ LANGUAGE

You can choose the language you want to use for the onscreen display from the language list in a menu.

1 Press the V/▲ buttons to choose LAN-GUAGE. Then press the OK button.

A sub-menu of the LANGUAGE function appears.



- 2 Press the **◄/▶** and **▼/▲** buttons to choose a language.
- 3 Press the OK button to complete the setting.

The menu disappears.

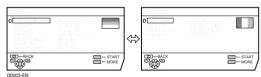
■ AUTO PROGRAM

You can automatically register the TV channels which can be received well at your residence in the TV's Programme numbers (PR) by performing the following.

1 Press the **▼**/**▲** buttons to choose AUTO PROGRAM. Then press the **OK** button.

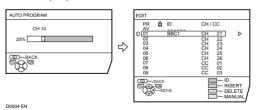
The COUNTRY menu appears as a sub-menu of the AUTO PROGRAM function.

There are two COUNTRY menus. Pressing the yellow button changes the COUNTRY menu as follows:



2 Press the ◄/▶ and ▼/▲ buttons to choose the country where you are now located. 3 Press the blue button to start the AUTO PROGRAM function.

The AUTO PROGRAM menu appears and received TV channels are automatically registered in the Programme numbers (PR).



If "ACI START/ACI SKIP" appears in the AUTO PRO-GRAM menu:

You can use the ACI (Automatic Channel Installation) function to decode the ACI data and complete the registration of all the TV channels in a short period of time. For details of the ACI function and how to use it, refer to "Using the ACI function" on page 28.

If you don't want to use the ACI function, press the ▼/▲ buttons to choose ACI SKIP and then press **೧K**.

To cancel the AUTO PROGRAM function: Press the **TV** button.

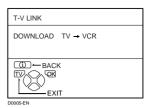
4 After the TV channels have been registered in the Programme numbers (PR), the EDIT menu appears.

You can proceed to edit the Programme numbers (PR) using the EDIT/MANUAL function. For details, see "EDIT/MANUAL" on page 24.

When not using the EDIT/MANUAL function:

If you do not need to use the EDIT/MANUAL function, go to the next step.

5 Press the OK button to display the T-V LINK menu.



6 Operate the T-V LINK menu according to the type of VCR connected to the EXT-2 terminal.

When a T-V LINK compatible VCR is not connected:

Press the **TV** button to exit the T-V LINK menu.

The T-V LINK menu disappears, and all the settings are completed.

When a T-V LINK compatible VCR is connected:

Follow the operating procedure "Downloading the data to VCR" on page 28 to transmit the Programme number (PR) data to the VCR.

Note:

- When your TV can detect the TV channel name from the TV channel broadcast signal, it automatically registers the TV channel name (ID) to the Programme number (PR) in which the TV channel has been registered.
- If a TV channel you want to view is not set to a Programme number (PR), manually set it using the MANUAL function. For details, see "EDIT/MANUAL" on page 24.
- The TV channel is not registered in Programme number PR 0 (AV). When you want to register a TV channel to PR 0 (AV) manually set it using the MANUAL function. For details. see "EDIT/MANUAL" on page 24.

■ EDIT/MANUAL

The EDIT/MANUAL functions are divided into two types: editing of the current Programme numbers (PR) (EDIT functions) and manual registration of a TV channel you want to view to the Programme number (PR) (MANUAL function). The details about these functions are as follows:

MOVE

This function changes a Programme number (PR) of a TV channel.

ID:

This function registers a Channel name (ID) to a TV channel.

INCEPT

This function adds a new TV channel in the current Programme numbers (PR) list by using the CH/CC number.

DELETE:

This function deletes a unnecessary TV channel.

MANUAL

This function manually registers a new TV channel in a Programme number (PR).

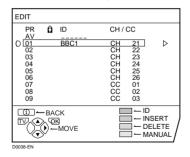
Caution:

- Using the MOVE, DELETE or INSERT function rewrites the current Programme numbers (PR) list. Resultingly, the Programme number (PR) of some of the TV channels will change.
- Using the MANUAL function for a TV channel for which the CHILD LOCK function has been set cancels the CHILD LOCK function for the TV channel.
- Using the MANUAL function for a TV channel for which the DECODER (EXT-2) function has been set to ON returns the setting of the DECODER (EXT-2) function for the TV channel to OFF.
- When a TV channel has already been registered in PR 99, using the INSERT function deletes the TV channel.

Note:

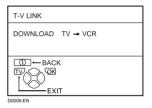
- For Programme number PR 0, "AV" appears in the Programme numbers (PR) list.
- An EXT terminal number does not appear in the Programme numbers (PR) list.
- The CH/CC number is a number unique to the TV and corresponding to the Channel number of a TV channel. For the relationship of a Channel number and a CH/CC number, see "CH/CC NUMBER" on page 33.
- You cannot use the INSERT function if you do not know a Channel number of a TV channel. Use the MANUAL function to register a TV channel in the Programme number (PR).

1 Press the ▼/▲ buttons to choose EDIT/ MANUAL. Then press the OK button.



- 2 Follow the operation description of a function you want to use and operate the function
- 3 Press the OK button to complete the settings.

The T-V LINK menu appears.



4 Operate the T-V LINK menu according to the type of VCR connected to the EXT-2 terminal.

When a T-V LINK compatible VCR is not connected:

Press the **TV** button to exit the T-V LINK menu.

The T-V LINK menu disappears and all the settings are completed.

When a T-V LINK compatible VCR is connected:

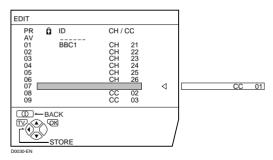
Follow the operating procedure "Downloading the data to VCR" on page 28 to transmit the Programme number (PR) data to the VCR.

MOVE

1 Press the V/▲ buttons to choose a TV channel.

Every time you press the **▼**/**△** buttons, the Programme number (PR) is changed over, and the picture of the TV channel registered in the Programme number (PR) appears on the screen.

2 Press the ▶ button to start the MOVE function.



3 Press the V/▲ buttons to choose a new Programme number (PR).

To cancel the MOVE function:

Press the (i) (Information) button.

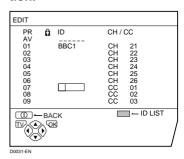
4 Press the ◀ button to change the Programme number (PR) of a TV channel to a new Programme number (PR).

ID

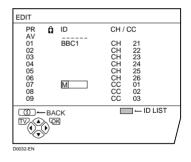
1 Press the **▼**/**▲** buttons to choose a TV channel.

Every time you press the **▼**/**△** buttons, the Programme number (PR) is changed over, and the picture of the TV channel registered in the Programme number (PR) appears on the screen.

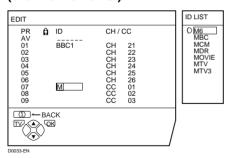
2 Press the red button to start the ID function.



3 Press the V/▲ buttons to choose the first character of a Channel name (ID) you want to attach to the TV channel.



4 Press the blue button to display the ID LIST (channel name list).



5 Press the ▼/▲ buttons to choose the Channel name (ID).

To cancel the ID function:

Press the (i) (Information) button.

6 Press the OK button to register a Channel name (ID) to a TV channel.

Note:

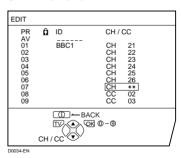
You can register your unique Channel name (ID) to the TV channel. When step 3 is completed, do not go to step 4, but press the ◄/▶ buttons to move the cursor and the ▼/▲ buttons to choose a character for completing the Channel name (ID). Then press the OK button to register the Channel name (ID) to the TV channel.

INSERT

Preparation:

- A CH/CC number unique to this TV and corresponding to the Channel number of a TV channel is required. Find the corresponding CH/CC number from a table "CH/CC NUMBER" on page 33 based on the Channel number of the TV channel.
- When the COUNTRY setting is not FRANCE, use a two-digit CH/CC number. When the COUNTRY setting is FRANCE, use a three-digit CH/CC number.
- Only when you add a TV channel (SECAM-L system) from a French station, be sure to set COUNTRY to FRANCE. If the COUNTRY setting is not FRANCE, follow the description "Changing the COUNTRY setting" on page 28 to change the COUNTRY setting to FRANCE, then start the INSERT function
- 1 Press the V/A buttons to choose a Programme number (PR) for which you will register a new TV channel.

2 Press the green button and start the IN-SERT function.



3 Press the V/▲ buttons to choose "CC" or "CH" according to the CH/CC number of the TV channel.

When the COUNTRY setting is FRANCE:

Choose "CH1", "CH2", "CC1" or "CC2".

To cancel the INSERT function:

Press the (i) (Information) button.

4 Press the Number buttons to enter the remaining CH/CC number.

The TV shifts to registration mode.

When the registration is completed, the picture of the TV channel appears on the screen.

Note:

• The CH/CC number is a number indicating the broadcast frequency to the TV. If the TV cannot detect the TV channel corresponding to the broadcast frequency indicated by the CH/CC number, a picture in the no-signal state appears.

DELETE

1 Press the V/▲ buttons to choose a TV channel.

Every time you press the **▼**/**△** buttons, the Programme number (PR) is changed over, and the picture of the TV channel registered in the Programme number (PR) appears on the screen.

2 Press the yellow button to delete the TV channel.

The TV channel is deleted from the Programme numbers (PR) list.

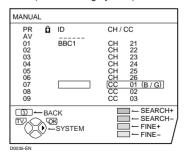
MANUAL

Preparation:

- As long as you register the TV channel (SECAM-L system) from a French station, be sure to set the COUNTRY setting to FRANCE. If the COUNTRY setting is not FRANCE, follow the description "Changing the COUNTRY setting" on page 28 to change the COUNTRY setting to FRANCE, then start the MANUAL function.
- 1 Press the V/▲ buttons to choose a Programme number (PR) to which you want to register a new TV channel.

2 Press the blue button to activate the MAN-UAL function.

At the right side following the CH/CC number, the SYS-TEM (broadcasting system) of the TV channel appears.



To cancel the MANUAL function:

Press the (i) (Information) button.

3 Press the ▶ button to choose the SYSTEM (broadcasting system) for a TV channel you want to register.

TV channel (SECAM-L system) from a French station:

Set the SYSTEM to "L". If it is set to one other than "L", you cannot receive the TV channel of the SECAM-L system.

Other TV channels:

If you do not know the correct broadcasting system, set the SYSTEM to "B/G". If "B/G" is not correct, it results in the fact that you will not hear the sound normally when the TV detects a TV channel. In this case, retry to set the SYSTEM again correctly so that no problem arises.

4 Press the green or red button to search for a TV channel.

Scanning stops when the TV finds a TV channel. Then the TV channel is displayed.

5 Press the green or red button repeatedly until the TV channel you want appears.

If the TV channel reception is poor:

Press the blue or yellow button to fine-tune the TV chan-

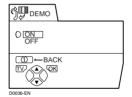
If you cannot hear the normal sound even when the picture of the TV channel appears normal-

The SYSTEM setting is wrong. Press the ▶ button and choose a SYSTEM that has normal sound.

6 Press the OK button and register the TV channel to a Programme number (PR).

The normal EDIT menu is resumed.

DEMO



To display the DEMO menu:

- 1 Press the OK button to display MENU (main menu).
- 2 Press the ▼/▲ button to choose DEMO. Then press the OK button.

The DEMO function automatically demonstrates some of the TV functions.

- 1 Press the V/▲ buttons to choose ON.
- 2 Press the OK button to complete the settings.

The DEMO function is set to ON, and the demonstration will start.

To stop the demonstration:

Press one of the buttons on the remote control.

When the DEMO function is set to ON:

Each time the TV is turned on, the demonstration starts automatically. If you do not want that to happen, perform the following operations to cancel the DEMO function:

- 1 Display the DEMO menu again.
- 2 Press the ▼/▲ buttons to choose OFF.
- 3 Press the OK button to cancel the DEMO function.

ADDITIONAL MENU OPERATIONS

■ Using the ACI function

This TV has an ACI function which decodes the ACI (automatic Channel Installation) data.

Using the ACI function allows all TV channels transmitted from the cable TV station to be properly registered quickly according to the data from the cable TV station.

Caution:

If your cable TV station broadcasts ACI data and if "ACI START/ACI SKIP" appears in the AUTO PROGRAM menu, the ACI function is enabled. In all other cases, it is disabled.

1 Press the V/▲ button to choose ACI START. Then press the OK button to start the ACI function.

When you don't want to use the ACI function:

Press the ∇ / Δ button to choose ACI SKIP and then press the **OK** button.

If the AUTO PROGRAM menu changes to another menu:

Depending on your cable TV station, there may be a broadcast selection menu set up by the cable TV station.

Follow the menu indications and use the $\blacktriangleleft/\triangleright$ and $\blacktriangledown/\blacktriangle$ buttons to operate the menu. After you have made the setting, press the **OK** button.

If "ACI ERROR" is displayed in the AUTO PROGRAM menu:

"ACI ERROR" denotes that the ACI function is not working properly. Press the **OK** button to start the ACI function again.

If "ACI ERROR" still appears even after you have tried to start the ACI function several times, press the ▶ button to start the AUTO PROGRAM function. It does not cause any problem because all the TV channels are registered to the Programme numbers (PR) by the AUTO PROGRAM function.

When the settings are completed, the EDIT menu is displayed. Return to the instructions that you were reading before, and continue the operation.

When the "Initial Settings" has been made: Return to step 6 of "Initial Settings" on page 4.

When the "AUTO PROGRAM" has been made: Return to step 4 of "AUTO PROGRAM" on page 23.

Note:

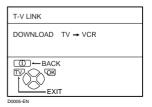
- If you have any questions about the items in the Broadcast Selection menu or how to operate the menu, please contact your cable TV station.
- When the cable TV broadcast reception is poor, the ACI function will not work properly.
- If there is an error in the ACI data itself, the TV channel cannot be registered properly. If this happens, turn the ACI function off (ACI SKIP) and use the AUTO PROGRAM function. Alternatively, use the EDIT/MANUAL function to correct the Programme number (PR) setting.

■ Downloading the data to VCR

You can transmit to the latest Programme numbers (PR) data to the VCR with the T-V LINK function

Caution:

- Only when the T-V LINK compatible VCR is connected to the EXT-2 terminal, this operation is enabled.
- Only when the T-V LINK menu is being displayed, this operation is enabled.



- 1 Turn on the VCR.
- 2 Press the OK button.

The data transmission begins.



The T-V LINK menu disappears once the data transmission ends.

When the T-V LINK menu is changed over to another menu:

The menu operation at the TV side is completed and it is shifted to the menu operation at the VCR side. Refer to the VCR Instruction Manual and operate the VCR.

Note:

- If "FEATURE NOT AVAILABLE" appears at the T-V LINK menu, ensure the following three items are correct; then press the OK button to retry data transmission
 - Has the T-V LINK compatible VCR been connected to the EXT-2 terminal?
 - Has the VCR power been turned on?
 - Does the SCART cable that is connected to the EXT-2 terminal to T-V LINK compatible VCR have all proper connections?

■ Changing the COUNTRY setting

After the AUTO PROGRAM function is completed, you can change the country you have already set by using the AUTO PROGRAM function.

When registering the TV channels for French broadcast stations (SECAM-L system), perform this operation to change the country.

1 Display the INSTALL menu.

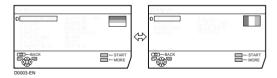
When the EDIT menu is currently being displayed:

Press the (i) (Information) to return to the INSTALL menu.

2 Press the ▼/▲ buttons to choose AUTO PROGRAM. Then press the OK button.

A COUNTRY menu appears as a sub-menu of the AUTO PROGRAM function.

There are two COUNTRY menus. Pressing the yellow button changes the COUNTRY as follows:



- 3 Press the **◄/▶** and the **▼/▲** buttons to choose a country.
- 4 Press the OK button to complete the setting.

The menu disappears.

To return to the INSTALL menu from the COUNTRY menu:

Press the $\ \widehat{\mathbf{i}}\$ (Information) button instead of the $\ \mathbf{OK}\$ button

■ Using the DECODER (EXT-2) function

When connecting a Decoder with a T-V LINK compatible VCR connected to the EXT-2 terminal, use the DECODER (EXT-2) function to unscramble the scrambled TV channels.

- 1 Turn on the Decoder power.
- 2 Display the TV channel capable of being unscrambled with the Decoder on the TV.

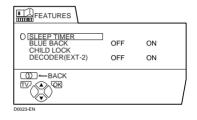
Even if the Decoder is functioning, a scrambled picture appears at this time.

3 Press the OK button to display the MENU.

The MENU (main menu) appears.

4 Press the V/▲ buttons to choose FEATURES. Then press the OK button.

The FEATURES menu appears.



5 Press the ▼/▲ buttons to choose DECOD-ER (EXT-2) . Then press the ◄/▶ buttons to choose ON.

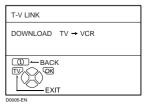
An unscrambled picture appears.

To cancel the DECODER (EXT-2) function:

Press the **◄/▶** buttons to choose OFF.

6 Press the OK button to complete the setting.

The T-V LINK menu appears.



- 7 Follow the operating procedure "Downloading the data to VCR" on page 28 to transmit the Programme number (PR) data to the VCR.
- 8 If you have another TV channel capable of being unscrambled with a Decoder, repeat steps 2 through 7.

Note:

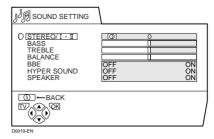
- If for some reason the DECODER (EXT-2) function has been set to "ON" but the TV channel cannot be unscrambled, check the following:
 - Has the Decoder been connected to the VCR properly according to the VCR and Decoder Instruction Manuals?
 - Has the Decoder power been turned on?
 - Can the TV channel be unscrambled with a Decoder?
 - Is it necessary to change the VCR settings in order to connect the Decoder? Confirm that the VCR is set properly by rechecking the VCR Instruction Manual.

■ Setting the SPEAKER function

Turn off the SPEAKER function so that TV speakers will not issue any sound.

- Press the OK button to display the MENU (main menu).
- 2. Press the ▼/▲ buttons to choose SOUND SETTING. Then press the OK button to display the SOUND SETTING menu.

The SOUND SETTING menu appears.



 Press the ▼/▲ buttons to choose SPEAK-ER. Then press the ◄/▶ buttons to choose OFF.

The sound from the TV speakers are cut.

Press the OK button to complete the settings.

The menu disappears.

Note:

- The ◀/▶ buttons of the TV remote control and the ∠ (volume) buttons at the front panel of your TV set can be used to control the volume of each speaker simultaneously.
- Setting the volume of the amplifier too high may damage the front speakers.

ADDITIONAL PREPARATION

■ Connecting the external devices

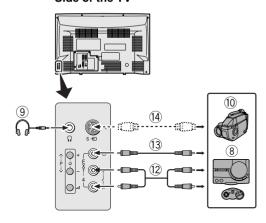
Connect the devices to the TV, paying attention to the following connection diagram.

Before connecting anything:

- Read the manuals provided with the devices. Depending on the devices, the connection method may differ from the figure. In addition, the device settings may be changed depending on the connection method to secure proper operation.
- Turn off all the devices including the TV.
- The "SPECIFICATIONS" on page 37 contains the details of the EXT terminals. If you are connecting a device not listed in the following connection diagram, see the table to choose the best EXT terminal.
- Note that connecting cables are not supplied.
- 1) VCR (composite signal)
- 2 VCR (composite signal/S-VIDEO signal)
- ③T-V LINK compatible VCR (composite signal/ S-VIDEO signal)
- (4) Decoder
- **5 DVD player (composite signal/S-VIDEO signal)**
- 6 DVD player (composite signal/RGB signal)
- TV game (composite signal/RGB signal)
- ®TV game (composite signal/S-VIDEO signal)
- 9 Headphones
- ① Camcorder (composite signal/S-VIDEO signal)
- ①SCART cable
- 12 Audio cable
- 13 Video cable
- (14) S-VIDEO cable

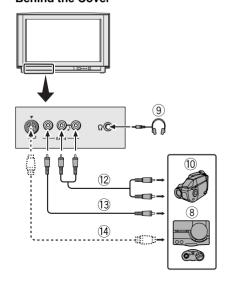
< AV32L2EU/AV28L2EU >

Side of the TV

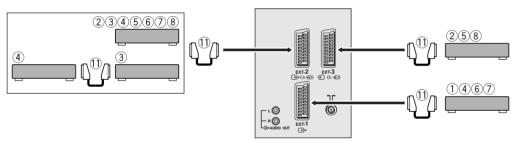


< AV32X10EU/AV28X10EU >

Behind the Cover



Back of the TV



Devices which can output the S-VIDEO signal (Y/C signal) such as a S-VHS VCR

Connect the device to an EXT terminal other than the EXT-1 terminal.

You can choose a video input signal from the S-VIDEO signal (Y/C signal) and regular video signal (composite signal). For details of how to operate the device, see "S-IN (S-VIDEO input)" on page 19.

T-V LINK compatible VCR

Be sure to connect the T-V LINK compatible VCR to the EXT-2 terminal. If not, the T-V LINK function will not work properly.

Note:

 When connecting a T-V LINK compatible VCR to the EXT-2 terminal, be sure to connect the Decoder to the VCR. If not, the T-V LINK function may not work properly. After you have registered TV channels to the Programme numbers (PR), set the DECODER (EXT-2) function for the Programme number (PR) to ON in order to unscramble a scrambled TV channel. For details of operation, see "Using the DECODER (EXT-2) function" on page 29.

Connecting headphones

Connect the headphones with a stereo mini-jack (of 3.5mm in diameter) to the headphone jack at the TV front panel.

Note:

When you connect the headphones, the TV speakers issue no sound.

Video/sound signal output from the EXT-2 terminal

You can arbitrarily change over the output of the video/sound signal from the EXT-2 terminal. It is useful when you want to dub the video/sound from another device on the VCR connected to the EXT-2 terminal. For details on how to do this operation, see "DUBBING" on page 20.

TV output from the EXT-1 terminal

The output of video/sound signal of a TV channel you are currently viewing is always output from the EXT-1 terminal.

Note:

- Changing over a Programme number (PR) also changes over the TV output from the EXT-1 terminal.
- The video/sound signal from an EXT terminal cannot be output.
- Teletext programmes cannot be output.

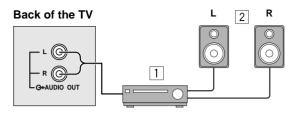
■ Connecting Speakers/Amplifier

While referring to the Audio equipment connection diagram, connect the audio equipment you desire to the TV.

You can use external front speakers to listen to the TV sound instead of the TV speakers. For details of how to operate them, see "Setting the SPEAKER function" on page 30.

Before connecting anything:

- Read the manuals provided with the amplifier and speakers
- Turn the TV and Amplifier off.
- To prevent magnetism from the speakers adversely effecting the TV screen, use magnetic-shielded speakers for the front speakers.
- · Note that connecting cables are not supplied.



- 1 Amplifier
- 2 Front speakers (Magnetic-shielded type)

Note:

The output from the AUDIO OUT terminal is not interrupted by headphone connection to the TV. You cannot cut the sound from the front speaker even if you connect a headphone to the TV.

CH/CC NUMBER

When you want to use the INSERT function on page 25, find the CH/CC number corresponding to the Channel number of the TV channel from this table.

СН	Channel
CH 02 / CH 202	E2, R1
CH 03 / CH 203	E3, ITALY A
CH 04 / CH 204	E4, ITALY B, R2
CH 05 / CH 205	E5, ITALY D, R6
CH 06 / CH 206	E6, ITALY E, R7
CH 07 / CH 207	E7, ITALY F, R8
CH 08 / CH 208	E8, R9
CH 09 / CH 209	E9, ITALY G
CH 10 / CH 210	E10, ITALY H, R10
CH 11 / CH 211	E11, ITALY H+1, R11
CH 12 / CH 212	E12, ITALY H+2, R12
CH 21 / CH 221	E21, R21
CH 22 / CH 222	E22, R22
CH 23 / CH 223	E23, R23
CH 24 / CH 224	E24, R24
CH 25 / CH 225	E25, R25
CH 26 / CH 226	E26, R26
CH 27 / CH 227	E27, R27
CH 28 / CH 228	E28, R28
CH 29 / CH 229	E29, R29
CH 30 / CH 230	E30, R30
CH 31 / CH 231	E31, R31
CH 32 / CH 232	E32, R32
CH 33 / CH 233	E33, R33
CH 34 / CH 234	E34, R34
CH 35 / CH 235	E35, R35
CH 36 / CH 236	E36, R36
CH 37 / CH 237	E37, R37
CH 38 / CH 238	E38, R38
CH 39 / CH 239	E39, R39

СН	Channel
CH 40 / CH 240	E40, R40
CH 41 / CH 241	E41, R41
CH 42 / CH 242	E42, R42
CH 43 / CH 243	E43, R43
CH 44 / CH 244	E44, R44
CH 45 / CH 245	E45, R45
CH 46 / CH 246	E46, R46
CH 47 / CH 247	E47, R47
CH 48 / CH 248	E48, R48
CH 49 / CH 249	E49, R49
CH 50 / CH 250	E50, R50
CH 51 / CH 251	E51, R51
CH 52 / CH 252	E52, R52
CH 53 / CH 253	E53, R53
CH 54 / CH 254	E54, R54
CH 55 / CH 255	E55, R55
CH 56 / CH 256	E56, R56
CH 57 / CH 257	E57, R57
CH 58 / CH 258	E58, R58
CH 59 / CH 259	E59, R59
CH 60 / CH 260	E60, R60
CH 61 / CH 261	E61, R61
CH 62 / CH 262	E62, R62
CH 63 / CH 263	E63, R63
CH 64 / CH 264	E64, R64
CH 65 / CH 265	E65, R65
CH 66 / CH 266	E66, R66
CH 67 / CH 267	E67, R67
CH 68 / CH 268	E68, R68
CH 69 / CH 269	E69, R69

сс	Channel
CC 01 / CC 201	S1
CC 02 / CC 202	S2
CC 03 / CC 203	S3
CC 04 / CC 204	S4
CC 05 / CC 205	S5
CC 06 / CC 206	S6
CC 07 / CC 207	S7
CC 08 / CC 208	S8
CC 09 / CC 209	S9
CC 10 / CC 210	S10
CC 11 / CC 211	S11
CC 12 / CC 212	S12
CC 13 / CC 213	S13
CC 14 / CC 214	S14
CC 15 / CC 215	S15
CC 16 / CC 216	S16
CC 17 / CC 217	S17
CC 18 / CC 218	S18
CC 19 / CC 219	S19
CC 20 / CC 220	S20
CC 21 / CC 221	S21
CC 22 / CC 222	S22
CC 23 / CC 223	S23
CC 24 / CC 224	S24
CC 25 / CC 225	S25
CC 26 / CC 226	S26
CC 27 / CC 227	S27
CC 28 / CC 228	S28
CC 29 / CC 229	S29
CC 30 / CC 230	S30

CC	Channel
CC 31 / CC 231	S31
CC 32 / CC 232	S32
CC 33 / CC 233	S33
CC 34 / CC 234	S34
CC 35 / CC 235	S35
CC 36 / CC 236	S36
CC 37 / CC 237	S37
CC 38 / CC 238	S38
CC 39 / CC 239	S39
CC 40 / CC 240	S40
CC 41 / CC 241	S41
CC 75 / CC 275	Х
CC 76 / CC 276	Y, R3
CC 77 / CC 277	Z, ITALY C, R4
CC 78 / CC 278	Z+1, R5
CC 79 / CC 279	Z+2

	1
CH	Channel
CH 102	F2
CH 103	F3
CH 104	F4
CH 105	F5
CH 106	F6
CH 107	F7
CH 108	F8
CH 109	F9
CH 110	F10
CH 121	F21
CH 122	F22
CH 123	F23
CH 124	F24
CH 125	F25
CH 126	F26
CH 127	F27
CH 128	F28
CH 129	F29
CH 130	F30
CH 131	F31
CH 132	F32
CH 133	F33
CH 134	F34
CH 135	F35
CH 136	F36
CH 137	F37
CH 138	F38
CH 139	F39

F40

СН	Channel
CH 141	F41
CH 142	F42
CH 143	F43
CH 144	F44
CH 145	F45
CH 146	F46
CH 147	F47
CH 148	F48
CH 149	F49
CH 150	F50
CH 151	F51
CH 152	F52
CH 153	F53
CH 154	F54
CH 155	F55
CH 156	F56
CH 157	F57
CH 158	F58
CH 159	F59
CH 160	F60
CH 161	F61
CH 162	F62
CH 163	F63
CH 164	F64
CH 165	F65
CH 166	F66
CH 167	F67
CH 168	F68
CH 169	F69

cc	Frequency (MHz)
CC 110	116 - 124
CC 111	124 - 132
CC 112	132 - 140
CC 113	140 - 148
CC 114	148 - 156
CC 115	156 - 164
CC 116	164 - 172
CC 123	220 - 228
CC 124	228 - 236
CC 125	236 - 244
CC 126	244 - 252
CC 127	252 - 260
CC 128	260 - 268
CC 129	268 - 276
CC 130	276 - 284
CC 131	284 - 292
CC 132	292 - 300
CC 133	300 - 306
CC 141	306 - 311
CC 142	311 - 319
CC 143	319 - 327
CC 144	327 - 335
CC 145	335 - 343
CC 146	343 - 351
CC 147	351 - 359
CC 148	359 - 367
CC 149	367 - 375
CC 150	375 - 383
CC 151	383 - 391

Frequency

СС	Frequency (MHz)
CC 152	391 - 399
CC 153	399 - 407
CC 154	407 - 415
CC 155	415 - 423
CC 156	423 - 431
CC 157	431 - 439
CC 158	439 - 447
CC 159	447 - 455
CC 160	455 - 463
CC 161	463 - 469

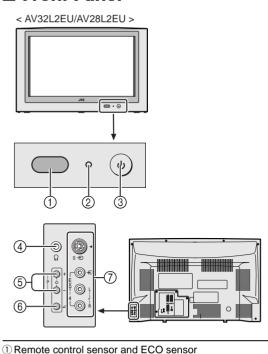
Note:

CH 140

- When two CH/CC numbers correspond to one Channel number, choose either one according to the current COUNTRY setting. When the COUNTRY setting is other than FRANCE, choose a two-digit CH/CC number. When the COUNTRY setting is FRANCE, choose a three-digit CH/CC number.
- Find the CH/CC number (CC110 to CC161) corresponding to the TV channel (SECAM-L system) from a French cable TV station, based on the broadcast frequency of the TV channel. When you do not know the broadcast frequency, please contact the cable TV station.
- The CH/CC numbers of CH102-CH169 and CC110-CC161 correspond to the TV channels being broadcast by a SECAM-L system. The other CH/CC numbers correspond to the TV channels being broadcast by a method other than a SECAM-L system.

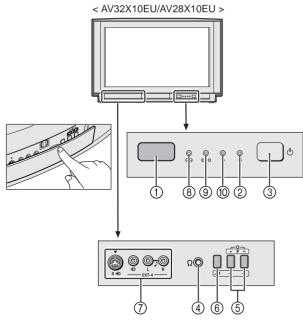
TV BUTTONS AND PARTS

■ Front Panel





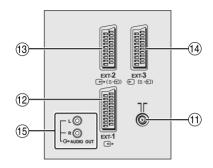
⑤ P V/∧ buttons / –/+ buttons page 8



€ (Volume) button	page 8
⑦ EXT-4 terminal	pages 19 and 31

- B HYPER SOUND lamp (Only AV32X10EU and AV28X10EU)
 The HYPER SOUND lamp lights while the HYPER SOUND function is in use.
- 9 ECO lamp (Only AV32X10EU and AV28X10EU)
 - If you set the ÉCO MODE function to ON, the ÉCO lamp lights.
- SLEEP TIMER lamp (Only AV32X10EU and AV28X10EU)
 The SLEEP TIMER lamp lights while the SLEEP TIMER function is operating.

■ Rear Panel



① Aerial socket	page 2
② EXT-1 terminal	pages 2, 19 and 31
13 EXT-2 terminal	pages 2, 5, 19 and 31

(4) EXT-3 terminal	pages 19 and 31
(5) AUDIO OUT terminal	page 32

TROUBLESHOOTING

If a problem arises while you are using the TV, please read this "Troubleshooting" well before you request having the TV repaired. You may be able to fix it easily by yourself. For example, if the AC plug is disconnected from the AC outlet, or the TV aerial has problems, you may think there is a problem with the TV itself.

Important:

- This Troubleshooting guide only covers problems whose cause are not easy to determine. If a question arise when you are operating a function, read the page(s) corresponding to the operation of the function well, not this Troubleshooting guide.
- After you have followed the Troubleshooting description or the operating description of the functions concerned without any success, remove the AC plug from the AC outlet and request a repair of your TV. Do not attempt to repair the TV by yourself or remove the rear cover of the TV.

If you cannot turn on the TV

- Is the AC plug connected to the AC outlet?
- Is the Power lamp lit? If not, press the Main power button.

No picture/No sound

- Have you chosen a TV channel whose reception is extremely bad? In this case, the BLUE BACK function will be activated, the entire screen becomes blue, and the sound is muted. In spite of this, if you want to view the TV channel, follow the description "BLUE BACK" on page 21 to try to change the BLUE BACK function setting to OFF.
- Have you connected the headphones to the TV? Connecting the headphones to the TV causes sounds not to be issued from the TV speakers.
- Have you set the SPEAKER function to OFF? Follow the description "SPEAKER" on page 18 to confirm the SPEAKER function setting to try to solve the problem.
- If the SYSTEM setting for a TV channel is incorrect, it may prevent the sound from being issued. Follow the description "EDIT/MANUAL" on page 24 to use the MANUAL function to try to change the SYSTEM setting.

Poor picture

If noise totally obscures the picture (snow), the aerial or aerial cable may have trouble. Check the following to try to solve the trouble:

Has the TV and aerial been connected properly? Has the aerial cable been damaged? Is the aerial pointed to the right direction? Is the aerial itself faulty?

- If the TV or aerial receives interference from the other devices, stripes or noise may appear in the picture. Move such devices as an amplifier, personal computer, or a hair drier that can cause interference away from your TV, or try changing its location. If the aerial suffers interference from a radio tower or high-voltage wire, please contact your local dealer.
- If the TV receives interference from signal reflecting from mountains or building, double-pictures (ghosting) will occur. Try to change the aerial's direction or replace the antenna with the one with better directionality.
- Are your COLOUR SYSTEM settings for the TV channels correct? Follow the description "COLOUR SYSTEM" on page 17 to try to solve the trouble.

- Has COLOUR or BRIGHT been controlled properly? Follow the description "Picture Adjustment" on page 15 to try to adjust them properly.
- Videotaping teletext is not recommended because it may not record correctly.
- When a white and bright still image (such as a white dress) is displayed on the screen, the white part may look as if it were coloured. It is a phenomenon unavoidable due to the nature of the picture tube itself, and not due to a TV failure. When the picture disappears from the screen, the unnatural colours will also disappear.
- When viewing images from commercially available video software products, or videos from videotapes which have been recorded improperly, the top of the image may be distorted. This is due to the condition of the video signal, and not because of malfunction.

Poor sound

- Have you adjusted BASS or TREBLE properly? If not, follow the description "Sound Adjustment" on page 18 to try to adjust them properly.
- When the TV channel reception is poor, it can be hard to hear the stereo or bilingual sound. In this case, follow the description "STEREO / I•II" on page 18 to hear the sound more easily by changing it to a mono sound.

Operation disabled

- Have the batteries of the remote control become exhausted? Follow the description "Putting Batteries into the Remote Control" on page 2 and replace them with new batteries to try to solve the problem.
- Have you attempted to use the remote control at the sides or rear of the TV or at a location more than seven meters apart from the TV location? Operate the remote control in the front of your TV or a location less than seven meters from your TV to try to solve the problem.
- When you are viewing a teletext programme, you cannot operate the menus. Press the TV button to return the teletext programme to the ordinary TV programme to try operating the manus.
- If the TV operation becomes disabled suddenly, press the Main power button on the TV and turn off the main power. Try to press the Main power button again to turn on the main power. If the TV returns to a normal state, it is not a failure.

Other concerns

- When the SLEEP TIMER function operates, the TV is automatically turned off. If the TV is turned off suddenly, try to press the ○/\(\big(\)(Standby)\) button to turn on the TV once again. At this time, if the TV resumes a normal state, there is no problem.
- When a WSS signal is included in the broadcast signal or the signal from an external device, or when the TV is receiving a control signal from an external device, the ZOOM mode will change automatically. When you want to return to the previous ZOOM mode, press the ZOOM button to choose the ZOOM mode again.
- If you bring a magnetised device such as a speaker near to your TV, a picture may be warped or unnatural colors appear at the corners of the screen. In this case, keep the device apart from your TV. If the speakers causes such phenomena, use the magnetic-shielded speakers instead.
- A picture may be tited due to the influence of the earth's magnetism. In this case, use the "PICTURE TILT" on page 17 to complete the tilt.
- It takes a short period of time from the time an operation such as changing channels is performed until an image is displayed. This is not a malfunction. This is the time required for the image to stabilize before it can be displayed.
- The TV may emit a crackling sound due to a sudden change in temperature. It does not matter if a picture or sound does not show any abnormality. If you hear crackling sounds frequently while you are viewing the TV, other causes may be assumed. For precautionary purposes, request your service technician to inspect it.
- Touching the screen may cause you feel a slight electric shock due to its static electricity. It is an unavoidable phenomenon due to the construction of the picture tube. It is not a problem with the TV. You can rest assured that this static discharge does not have harmful influence over the human body.

SPECIFICATIONS

Model	AV32L2EU*	AV28L2EU*	
Broadcasting systems	CCIR B/G, I, D/K, L		
Colour systems	PAL, SECAM • The EXT terminals also support the NTSC 3.58/4.43 MHz system.		
Channels and frequencies	 E2-E12, E21-E69, S1-S41, X, Y, Z, Z+1, Z+2, ITALY A-H, ITALY H+1, ITALY H+2, F2-F10, F21-F69, R1-R12, R21-R69 French cable TV channel of broadcast frequencies 116 - 172 MHz and 220 - 469 MHz 		
Sound-multiplex systems	A2 (B/G, D/K), NICAM (B/G, I, D/K, L) system		
Teletext systems	FLOF (Fastext), TOP, WST (World Standard System)		
Power requirements	220 - 240 V AC, 50 Hz		
Power consumption	Maximum: 189 W, Average: 140 W, Standby: 2.8 W	Maximum: 183 W, Average: 127 W, Standby: 2.8 W	
Picture tube size	Viewable area 76 cm (measured diagonally)	Viewable area 66 cm (measured diagonally)	
Audio output	Rated Power output: 7.5 W + 7.5 W		
Speakers	(20 cm × 4 cm) oval × 2		
EXT-1 terminal	Euroconnector (21-pin, SCART) • Video input, Audio L/R inputs and RGB inputs are available. • TV broadcast outputs (Video and Audio L/R) are available.		
EXT-2 terminal	Euroconnector (21-pin, SCART) • Video input, S-VIDEO (Y/C) input, Audio L/R inputs and RGB inputs are available. • Video and Audio L/R outputs are available. • T-V LINK functions are available.		
EXT-3 terminal	Euroconnector (21-pin, SCART) • Video input, S-VIDEO (Y/C) input and Audio L/R inputs are available.		
EXT-4 terminal	RCA connectors × 3 S-VIDEO connector × 1 • Video input, S-VIDEO (Y/C) input and Audio L/R inputs are available.		
AUDIO OUT terminal	RCA connectors × 2 • Variable audio L/R outputs are available. • Variable out 0-1 Vrms, low impedance		
Headphone jack	Stereo mini-jack (3.5 mm in diameter)		
Dimensions ($W \times H \times D$)	901 mm × 556 mm × 557 mm	800 mm × 500 mm × 498 mm	
Weight	53.8 kg	41 kg	
Accessories	Remote control unit x 1 (RM-C54) AAA/R03 dry cell battery × 2		

^{*} A basic model number. The actual model number may have characters added (such as "S" denoting silver) indicating the colour of the TV set.

Design and specifications subject to change without notice.

Pictures displayed on the screen using this TV's ZOOM functions should not be shown for any commercial or demonstration purpose in public places (cafes, hotels, etc.) without the consent of the owners of copyright of the original picture sources, as this constitutes an infringement of copyright.

Model	AV32X10EU*	AV28X10EU*	
Broadcasting systems	CCIR B/G, I, D/K, L		
Colour systems	PAL. SECAM		
	The EXT terminals also support the NTSC 3.58/4.43 MHz system.		
Channels and frequencies	• E2-E12, E21-E69, S1-S41, X, Y, Z, Z+1, Z+2, ITALY A-H, ITALY H+1, ITALY H+2, F2-F10 F21-F69, R1-R12, R21-R69		
	French cable TV channel of broadcast frequencies 116 - 172 MHz and 220 - 469 MHz		
Sound-multiplex systems	A2 (B/G, D/K), NICAM (B/G, I, D/K, L) system		
Teletext systems	FLOF (Fastext), TOP, WST (World Standard S	System)	
Power requirements	220 - 240 V AC, 50 Hz	220 - 240 V AC, 50 Hz	
Power consumption	Maximum: 189 W, Average: 140 W, Standby: 2.8 W	Maximum: 183 W, Average: 127 W, Standby: 2.8 W	
Picture tube size	Viewable area 76 cm (measured diagonally)	Viewable area 66 cm (measured diagonally)	
Audio output	Rated Power output: 7.5 W + 7.5 W		
Speakers	(16 cm × 4 cm) oval × 2		
EXT-1 terminal	Euroconnector (21-pin, SCART) • Video input, Audio L/R inputs and RGB inputs are available. • TV broadcast outputs (Video and Audio L/R) are available.		
EXT-2 terminal	Euroconnector (21-pin, SCART) • Video input, S-VIDEO (Y/C) input, Audio L/R inputs and RGB inputs are available. • Video and Audio L/R outputs are available. • T-V LINK functions are available.		
EXT-3 terminal	Euroconnector (21-pin, SCART) • Video input, S-VIDEO (Y/C) input and Audio L/R inputs are available.		
EXT-4 terminal	RCA connectors × 3 S-VIDEO connector × 1 ■ Video input, S-VIDEO (Y/C) input and Audio L/R inputs are available.		
AUDIO OUT terminal	RCA connectors × 2 • Variable audio L/R outputs are available. • Variable out 0-1 Vrms, low impedance		
Headphone jack	Stereo mini-jack (3.5 mm in diameter)		
Dimensions ($W \times H \times D$)	855 mm × 550 mm × 568 mm	780 mm × 509 mm × 499 mm	
Weight	54.2 kg	40.2 kg	
Accessories	Remote control unit x 1 (RM-C54 (Silver) or RM-C50 (Black) is supplied.) AAA/R03 dry cell battery × 2		

^{*} A basic model number. The actual model number may have characters added (such as "S" denoting silver) indicating the colour of the TV set.

Design and specifications subject to change without notice.

Pictures displayed on the screen using this TV's ZOOM functions should not be shown for any commercial or demonstration purpose in public places (cafes, hotels, etc.) without the consent of the owners of copyright of the original picture sources, as this constitutes an infringement of copyright.



JVC

SERVICE MANUAL

COLOUR TELEVISION

AV32L2EUGR/A AV32L2EUGY/A

Supplementary

BASIC CHASSIS

MF

The following item for the A models were changed partly from previous models. Therefore, this service manual describes only the items which differ from those of the previous models service manual.

For details other than those described in this manual, please refer to the previous model service manual (No.51817, Jun 2001).

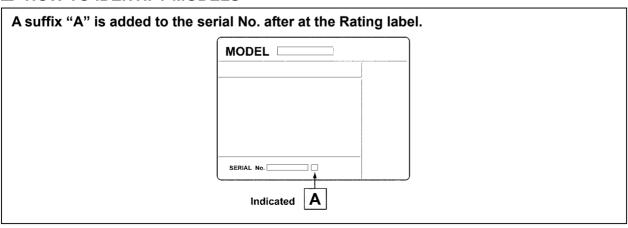
■ MODEL DIFFERENCE

A Models	Previous Models
AV32L2EUGR/A	AV32L2EUGR
AV32L2EUBL/A	AV32L2EUBL
AV32L2EUGY/A	AV32L2EUGY

OUTLINE

Since the picture tube was changed, we have issued the SERVICE MANUAL for A Models.

■ HOW TO IDENTIFY MODELS



DIFFERENCE LIST

● USING PW BOARD (Page 32)

MODEL PWB ASS'Y	AV32L2EUGR AV32L2EUBL AV32L2EUGY	AV32L2EUGR/A AV32L2EUBL/A AV32L2EUGY/A
MAIN PWB	SMF-1002A-U2	SMF-1011A-U2
POWER & DEF PWB	SMF-2002A-U2	SMF-2008A-U2
CRT SOCKET PWB	SMF-3001A-U2	SMF-3007A-U2

• EXPLODED VIEW PARTS LIST (Page 34)

		Pa		
⚠	Ref. No.	AV32L2EUGR AV32L2EUBL AV32L2EUGY	AV32L2EUGR/A AV32L2EUBL/A AV32L2EUGY/A	Parts Name
\triangle	V01	W76ERF041X044	W76ERF042X044	PICTURE TUBE (ITC)
\triangle	L03	CELD904-001	QQW0130-001	ROTATION COIL
\triangle	26	LC20380-011A-U	LC20380-028A-U	RATING LABEL (AV32L2EUGR/A)
\triangle	26	LC20380-015A-U	LC20380-027A-U	RATING LABEL (AV32L2EUBL/A)
\triangle	26	LC20380-024A-U	LC20380-026A-U	RATING LABEL (AV32L2EUGY/A)
⚠	28	LC20379-011A-U	LC21095-003A-U	RATING LABEL (AV32L2EUGR/A)
⚠	28	LC20379-015A-U	LC21095-002A-U	RATING LABEL (AV32L2EUBL/A)
⚠	28	LC20379-020A-U	LC21095-001A-U	RATING LABEL (AV32L2EUGY/A)

PRINTED WIRING BOARD PARTS LIST

MAIN P.W. BOARD ASS'Y (Page 36-38)

Although the connector has been changed due to ROTATION COIL change, the supply parts will remain unchanged.

POWER & DEF P.W. BOARD ASS'Y (Page 38-40)

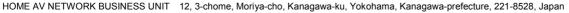
⚠ Symbol No.		Par	ts No.	Douts name	Description	
	SMF-2002A-U2 SMF-2008A-U2		Parts name	Description		
⚠	R2553	QRZ9017-4R7			Delete	
	R2554	QRE141J-0R0			Delete	
⚠	C2522	QFZ0200-113	QFZ0200-123	MPP CAP	0.012µF 1.5kVH ±3%	

CRT SOCKET P.W. BOARD ASS'Y (Page 40-41)

Λ	Symbol No.	Par	ts No.	Parts name	Description	
45	Symbol No.	SMF-3001A-U2	SMF-3007A-U2	Parts Haille	Description	
	R3248		QRE141J-0R0	C. R.	0Ω 1/4W J	



ICTOR COMPANY OF JAPAN, LIMITED







PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety. Whenever replacing these parts, be sure to use specified ones to secure the safety.
- The parts not indicated in this Parts List and those which are filled with lines —— in the Parts No. columns will not be supplied.
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

	RESISTORS		CAPACITORS
CR	Carbon Resistor	C CAP.	Ceramic Capacitor
FR	Fusible Resistor	E CAP.	Electrolytic Capacitor
PR	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	К	М	N	R	Н	Z	Р
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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■ PACKING ·····	_
■ PACKING PARTS LIST······	

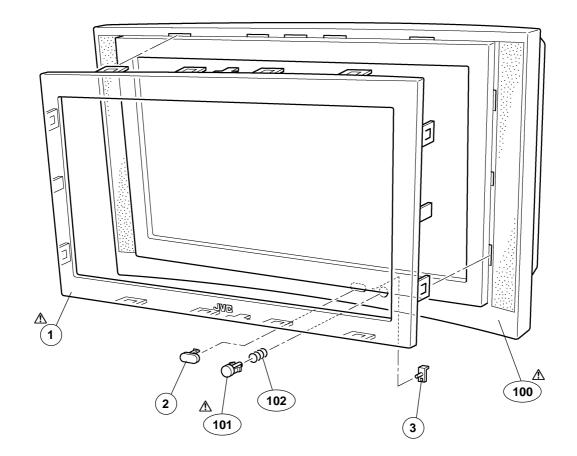
USING PW BOARD & REMOTE CONTROL UNIT

Model PWB ASS'Y	AV32L2EUGR	AV32L2EUBL	AV32L2EUGY
MAIN PWB	SMF-1002A-U2	←	←
POWER & DEF. PWB	SMF-2002A-U2	←	←
CRT SOCKET PWB	SMF-3001A-U2	←	←
FRONT CONTROL PWB	SMF-8001A-U2	←	←
SIDE CONTROL PWB	SMF-8101A-U2	←	←
MICON PWB	SMF0M001A-U2	←	←
AV SW PWB	SMF0S002A-U2	←	←
100Hz PWB	SMF0Z004A-U2	←	←
REMOTE CONTROL UNIT	RM-C54-1C	←	←

EXPORTED VIEW PARTS LIST (1)

⚠ Ref.No.	Part No.	Part Name	Description	
AV32L2E	UGR / AV32L2EUE	BL / AV32L2EUGY		
A 1 1 A 1 2 3	LC10851-002B-U LC10851-003A-U LC10851-004A-U LC31203-001B-C LC31202-001A-C	FRONT PANEL FRONT PANEL FRONT PANEL REMOCON WINDOW L.E.D.LENS	[AV32L2EUGR] [AV32L2EUBL] [AV32L2EUGY]	
⚠ 100 ⚠ 101	LC31202-001A-C LC10854-001C-U LC31201-002A-U AFM3149-001-F	F CABI ASSY POWER KNOB	Inc.101~102 (SERVICE)	

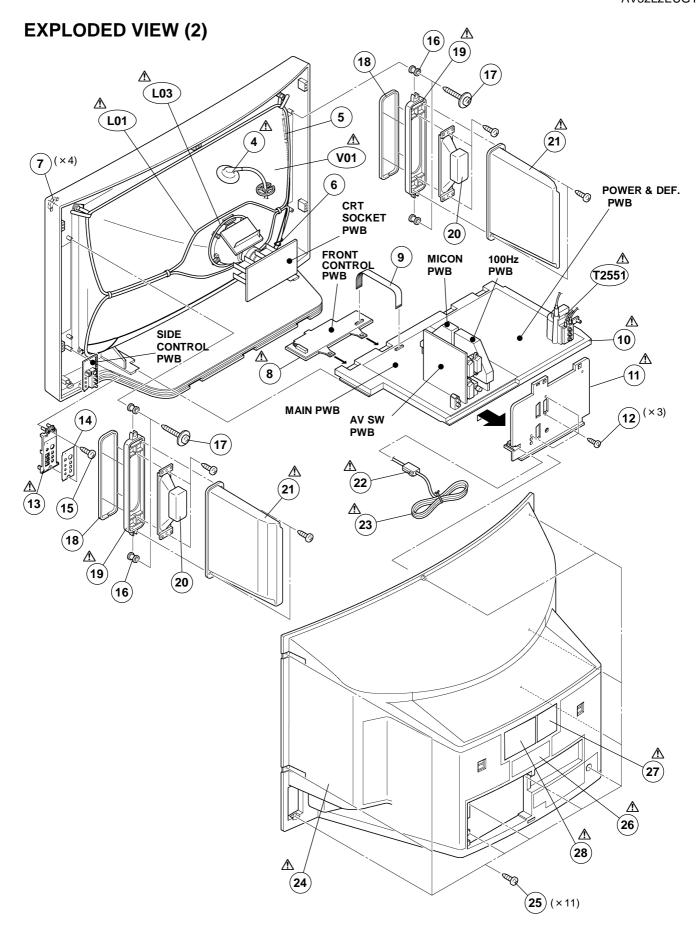
EXPLODED VIEW (1)



EXPLODED VIEW PARTS LIST (2)

	⚠ Ref.No.	Part No.	Part Name	Description
--	-----------	----------	-----------	-------------

AV32L2EU	IGR / AV32L2EUB	L / AV32L2EUGY	
↑ V01	W76ERF041X044	CRT	Inc.DY,PC MAGNET, WEDGE
↑ L01	QQW0066-001	DEG.COIL	
↑ L03	CELD904-001	ROTATION COIL	
↑ T2551	QQHOO91-002-I2	FBT	(SERVICE)With ANODE WIRE
↑ 4	QNZ0369-001	ANODE WIRE	
5	WJY0001-010A	BRAIDED ASSY	
6	WJY0013-002A	BRAIDED SUB ASSY	
7	LC20508-001D-U	ADAPTOR	(×4)
⚠ 8	LC11009-002B-U	CONTROL BASE	
9	CHFD125-14BD	FFC WIRE	
⚠ 10	LC10716-002F-U	CHASSIS BASE	
⚠ 11	LC10717-006B-U	TERMINAL BOARD	
12 ▲ 13 14	QYSBSB3012M LC10856-001C-U LC31205-002A-U	TAPPING SCREW SIDE CONT BASE CONTROL SHEET	(×3)For TERMINAL BOARD
15	QYSBSAG4016N	TAPPING SCREW	(×1)For SIDE CONT.BASE
16	AEM4087-001-E	BUSHING	(×4)
17	LC40506-001A	TAPPING SCREW	(×4)
18	AEM3029-A07-E	STICK SHEET	(×4)
△ 19	LC11017-001A-U	SPEAKER ADAPTER	(×2)
20	QAS0072-001	SPEAKER	(×2)SP01,SP02
<u>A</u> 21	LC10858-001B-U	SPEAKER BOX	(×2)
<u>↑</u> 22	CM46618-A01-E	POWER CORD CLAMP	(CN-PW)
<u>↑</u> 23	QMPK160-185-JC	POWER CORD	
△ 24 25 △ 26 △ 26 △ 27 △ 27 △ 28 △ 28 △ 28	LC10853-002E-U QYSBSAG4016N LC20380-011A-U LC20380-015A-U LC20380-024A-U	REAR COVER TAPPING SCREW RATING LABEL RATING LABEL RATING LABEL	(×11)For REAR COVER [AV32L2EUGR] [AV32L2EUBL] [AV32L2EUGY]
↑ 27 ↑ 28 ↑ 28 ↑ 28	LC20789-002A-U LC20379-011A-U LC20379-015A-U LC20379-020A-U	WARNING LABEL RATING LABEL RATING LABEL RATING LABEL	[AV32L2EUGR] [AV32L2EUBL] [AV32L2EUGY]



AV32L2EUGL / AV32L2EUBL / AV32L2EUGY

PRINTED WIRING BOARD PARTS LIST

■MAIN P.W. BOARD ASS'Y (SMF-1002A-U2)

∆ Symbol No.	Part No.	Part Name	Description	∆ Symbol No.	Part No.	Part Name	Description
RES	ISTOR			RES	ISTOR		
R1004-05 R1008-09 R1101 R1102 R1103 R1104 R1105 R1106	NRSA63J-101X NRSA63J-0R0X NRSA63J-102X NRSA63J-181X NRSA63J-222X NRSA63J-102X NRSA63J-331X NRSA63J-270X	MG R MG R MG R MG R MG R MG R MG R	100Ω 1/16W J 0.0Ω 1/16W J 1kΩ 1/16W J 180Ω 1/16W J 2.2kΩ 1/16W J 1kΩ 1/16W J 330Ω 1/16W J 27Ω 1/16W J	R1512 R1521 R1522 R1551 R1552 R1553 R1554 R1555	NRSA63J-332X NRSA63J-223X NRSA63J-562X NRSA63J-100X NRSA63J-124X NRSA63J-683X NRSA63J-562X NRSA63J-333X	MG R MG R MG R MG R MG R MG R MG R	3.3kΩ 1/16W J 22kΩ 1/16W J 5.6kΩ 1/16W J 10Ω 1/16W J 120kΩ 1/16W J 68kΩ 1/16W J 5.6kΩ 1/16W J 33kΩ 1/16W J
R1107 R1108 R1109-11 R1151 R1153 R1156 R1158-59 R1161	NRSA63J-271X NRSA63J-102X NRSA63J-101X NRSA63J-101X NRSA63J-101X NRSA63J-0ROX NRSA63J-0ROX NRSA63J-0ROX	MG R	$\begin{array}{ccccc} 270\Omega & 1/16W & J \\ 1k\Omega & 1/16W & J \\ 100\Omega & 1/16W & J \\ 100\Omega & 1/16W & J \\ 100\Omega & 1/16W & J \\ 0.0\Omega & 1/16W & J \\ \end{array}$	R1556 R1557 R1558 R1559 R1560 R1561 R1562 R1563	NRSA63J-472X NRSA63J-562X NRSA63J-104X NRSA63J-154X NRSA63J-100X QRN143J-0R0X NRSA63J-683X NRSA63J-103X	MG R MG R MG R MG R C R MG R MG R	4.7kΩ 1/16W J 5.6kΩ 1/16W J 100kΩ 1/16W J 150kΩ 1/16W J 10Ω 1/16W J 0.ΩΩ 1/16W J 68kΩ 1/16W J 10kΩ 1/16W J
R1301-02 R1303 R1304 R1311 R1312 R1313 R1314 R1315-17	NRSA63J-101X NRSA63J-273X NRSA63J-0ROX NRSA63J-331X NRSA63J-273X NRSA63J-183X NRSA63J-221X NRSA63J-101X	MG R	100Ω 1/16W J 27kΩ 1/16W J 0.0Ω 1/16W J 330Ω 1/16W J 27kΩ 1/16W J 18kΩ 1/16W J 220Ω 1/16W J 100Ω 1/16W J	R1564 R1565 R1591 R1592 R1601 R1602 R1603 R1604	NRSA63J-223X NRSA63J-562X NRSA63J-561X NRSA63J-332X NRSA63J-273X NRSA63J-103X NRSA63J-103X NRSA63J-103X	MG R MG R MG R MG R MG R MG R MG R	22kΩ 1/16W J 5.6kΩ 1/16W J 560Ω 1/16W J 3.3kΩ 1/16W J 27kΩ 1/16W J 10kΩ 1/16W J 27kΩ 1/16W J 10kΩ 1/16W J
R1318 R1319 R1321-22 R1401-02 R1403-04 R1405-06 R1451 R1454	NRSA63J-562X NRSA63J-183X NRSA63J-0ROX NRSA63J-102X NRSA63J-331X NRSA63J-102X NRSA63J-821X NRSA63J-472X	MG R	5.6kΩ 1/16W J 18kΩ 1/16W J 0.0Ω 1/16W J 1kΩ 1/16W J 330Ω 1/16W J 1kΩ 1/16W J 820Ω 1/16W J 4.7kΩ 1/16W J	R1605 R1606 R1609 R1610 R1618 R1619 R1620 R1637	NRSA63J-473X NRSA63J-273X NRSA63J-104X NRSA63J-682X NRSA63J-333X NRSA63J-104X NRSA63J-562X QRK126J-2R2X	MG R MG R MG R MG R MG R MG R MG R	47kΩ 1/16W J 27kΩ 1/16W J 100kΩ 1/16W J 6.8kΩ 1/16W J 33kΩ 1/16W J 100kΩ 1/16W J 5.6kΩ 1/16W J 2.2Ω 1/2W J
R1455-56 R1457 R1458 R1459 R1461 R1462 R1463 R1464	NRSA63J-123X NRSA63J-392X NRSA63J-123X NRSA63J-472X NRSA63J-123X NRSA63J-153X NRSA63J-154X QRE141J-563Y	MG R	12kΩ 1/16W J 3.9kΩ 1/16W J 12kΩ 1/16W J 4.7kΩ 1/16W J 12kΩ 1/16W J 15kΩ 1/16W J 15kΩ 1/16W J 120kΩ 1/16W J 56kΩ 1/4W J	R1639 R1642-43 R1644 R1645-46 R1649 R1650-51 R1656 R1657	NRSA63J-561X NRSA63J-681X NRSA63J-104X NRSA63J-0R0X QRK126J-2R2X NRSA63J-103X NRSA63J-683X NRSA63J-333X	MG R MG R MG R MG R C R MG R MG R MG R	560Ω 1/16W J 680Ω 1/16W J 100kΩ 1/16W J 0.0Ω 1/16W J 2.2Ω 1/2W J 10kΩ 1/16W J 68kΩ 1/16W J 33kΩ 1/16W J
R1465-66 R1467 R1468 R1469 R1470 R1471 R1472 R1473	NRSA63J-224X NRSA63J-563X NRSA63J-224X NRSA63J-223X NRSA63J-223X NRSA63J-273X NRSA63J-682X NRSA63J-123X	MG R	220kΩ 1/16W J 56kΩ 1/16W J 220kΩ 1/16W J 68kΩ 1/16W J 22kΩ 1/16W J 27kΩ 1/16W J 6.8kΩ 1/16W J 12kΩ 1/16W J	R1658 R1659 R1664-65 R1666 R1667 R1668 R1669 R1670-71	NRSA63J-683X NRSA63J-393X NRSA63J-103X NRSA63J-473X NRSA63J-183X NRSA63J-473X NRSA63J-183X NRSA63J-104X	MG R MG R MG R MG R MG R MG R MG R	68kΩ 1/16W J 39kΩ 1/16W J 10kΩ 1/16W J 47kΩ 1/16W J 18kΩ 1/16W J 47kΩ 1/16W J 18kΩ 1/16W J 100kΩ 1/16W J
R1474 R1475 R1476-78 R1479 R1480 R1481 R1482 R1483	NRSA63J-563X NRSA63J-153X NRSA63J-123X NRSA63J-154X NRSA63J-823X NRSA63J-472X NRSA63J-272X NRSA63J-472X	MG R	56kΩ 1/16W J 15kΩ 1/16W J 12kΩ 1/16W J 150kΩ 1/16W J 82kΩ 1/16W J 4.7kΩ 1/16W J 2.7kΩ 1/16W J 4.7kΩ 1/16W J	R1672 R1673 R1675 R1677-78 R1679 R1680 R1682 R1683	NRSA63J-223X NRSA63J-273X NRSA63J-103X NRSA63J-103X NRSA63J-223X NRSA63J-273X NRSA63J-273X NRSA63J-103X	MG R MG R MG R MG R MG R MG R MG R	22kΩ 1/16W J 27kΩ 1/16W J 10kΩ 1/16W J 10kΩ 1/16W J 22kΩ 1/16W J 27kΩ 1/16W J 27kΩ 1/16W J 27kΩ 1/16W J 10kΩ 1/16W J
R1484 R1485 R1486 R1487 R1489 R1491 R1492 R1501	NRSA63J-473X NRSA63J-123X NRSA63J-472X NRSA63J-333X NRSA63J-333X NRSA63J-332X NRSA63J-562X NRSA63J-0ROX	MG R	47kΩ 1/16W J 12kΩ 1/16W J 4.7kΩ 1/16W J 33kΩ 1/16W J 33kΩ 1/16W J 3.3kΩ 1/16W J 5.6kΩ 1/16W J 0.0Ω 1/16W J	R1684-85 R1686 R1687 R1688 R1689 R1693 R1694 R1695-96	NRSA63J-393X NRSA63J-683X NRSA63J-393X NRSA63J-273X NRSA63J-103X NRSA63J-683X NRSA63J-333X NRSA63J-273X	MG R MG R MG R MG R MG R MG R MG R	39kΩ 1/16W J 68kΩ 1/16W J 39kΩ 1/16W J 77kΩ 1/16W J 10kΩ 1/16W J 68kΩ 1/16W J 33kΩ 1/16W J 27kΩ 1/16W J
R1504 R1511	NRSA63J-102X NRSA63J-152X	MG R MG R	1kΩ 1/16W J 1.5kΩ 1/16W J	R1701-02 R1703-04	NRSA63J-103X NRSA63J-102X	MG R MG R	10kΩ 1/16W J 1kΩ 1/16W J

⚠	Symbol No.	Part No.	Part Name	Description
_	RESI	STOR		
	R1705-08 R1711-12 R1714-15 R1716-17 R1720-22 R1772-76 R1951	NRSA63J-103X NRSA63J-101X NRSA63J-102X NRSA63J-0ROX NRSA63J-102X NRSA63J-221X QRK126J-220X	MG R MG R MG R MG R MG R C R	10kΩ 1/16W J 100Ω 1/16W J 1kΩ 1/16W J 0.0Ω 1/16W J 1kΩ 1/16W J 220Ω 1/16W J 220Ω 1/16W J
_	CAPA	CITOR		
	C1001 C1002 C1004 C1005 C1006 C1007 C1009 C1010	NCB31HK-222X QETN1HM-106Z NCB31CK-104X QETN1CM-108Z NCB31HK-103X QETN1HM-106Z NCB31CK-104X QETN1HM-106Z	CHIP CAP. E CAP. CHIP CAP. E CAP. C CAP. E CAP. C CAP. E CAP. CHIP CAP.	2200pF 50V K 10µF 50V M 0.1µF 16V K 1000µF 16V M 0.01µF 50V M 0.1µF 50V M 10µF 50V M
	C1101 C1102 C1103 C1104 C1105 C1106-07 C1108 C1111	NCB31CK-104X QETN1HM-106Z NCB31CK-104X QETN1CM-107Z QETN1HM-106Z NCB31CK-104X NDC31HJ-680X NDC31HJ-821X	CHIP CAP. E CAP. CHIP CAP. E CAP. E CAP. CHIP CAP. C CAP. C CAP.	0.1µF 16V K 10µF 50V M 0.1µF 16V K 100µF 16V M 10µF 50V M 0.1µF 16V K 68pF 50V J 820pF 50V J
	C1112-13 C1114 C1115-16 C1117-18 C1119-20 C1121 C1122-23 C1124-25	NDC31HJ-470X NDC31HJ-180X NCB31HK-472X NCB31HK-103X NDC31HJ-2R0X NCB31HK-103X NDC31HJ-102X QETN1HM-106Z	C CAP. E CAP.	47pF 50V J 18pF 50V J 4700pF 50V K 0.01µF 50V K 2.0pF 50V J 0.01µF 50V K 1000pF 50V J 10µF 50V M
	C1126 C1127 C1128 C1129 C1130 C1151-54 C1155-56 C1301	NCB31CK-104X QETN1HM-106Z NCB31CK-104X NCF31AZ-105X QETN1HM-106Z NCF31AZ-105X NDC31HJ-102X QETN1CM-107Z	CHIP CAP. E CAP. CHIP CAP. C CAP. E CAP. C CAP. C CAP. C CAP. E CAP. C CAP.	0.1µF 16V K 10µF 50V M 0.1µF 16V K 1µF 10V Z 10µF 50V M 1µF 10V Z 1000pF 50V J 100µF 16V M
	C1302-03 C1305-09 C1310 C1311 C1312 C1313-15 C1316-18 C1320	NCB31CK-104X NCB31CK-104X QETN1AM-228Z NCB31CK-683X NDC31HJ-221X NCB31HK-223X NCB31HK-103X QETN0JM-228Z	CHIP CAP. CHIP CAP. E CAP. CHIP CAP. C CAP. C CAP. C CAP. C CAP. E CAP.	0.1µF 16V K 0.1µF 16V K 2200µF 10V M 0.068µF 15V K 2200F 50V J 0.022µF 50V K 0.01µF 50V K 2200µF 6.3V M
	C1321-23 C1324 C1351 C1401 C1402 C1403-04 C1453 C1454	NCB31HK-223X NDC31HJ-820X QENC1EM-106Z NCB31CK-104X QETN1CM-107Z NCB31CK-104X NCB31CK-104X NCB31HK-103X NCB31EK-333X	CHIP CAP. C CAP. BP E CAP. CHIP CAP. E CAP. C CAP. C CAP. C CAP. C CAP.	0.022µF 50V K 82pF 50V J 10µF 25V M 0.1µF 16V K 100µF 16V M 0.1µF 16V K 0.01µF 50V K 0.033µF 25V K
	C1455-56 C1457 C1458 C1471 C1472 C1473 C1474 C1475	NCB31CK-104X NCB31EK-333X QFV71HJ-104Z NCB31CK-104X NCB31HK-103X NCB31CK-104X NCB31EK-333X NCB31CK-104X	CHIP CAP. CHIP CAP. MF CAP. CHIP CAP. C CAP. C CAP. CHIP CAP. CHIP CAP. CHIP CAP.	0.1µF 16V K 0.033µF 25V K 0.1µF 50V J 0.1µF 16V K 0.01µF 50V K 0.1µF 16V K 0.033µF 25V K 0.1µF 16V K
	C1491 C1501-02 C1521 C1551-52 C1553 C1554-55	NCB31EK-473X NDC31HJ-150X NCB31HK-103X NCF31CZ-224X QETN1EM-476Z NCF31CZ-224X	CHIP CAP. C CAP. C CAP. C CAP. E CAP. C CAP.	0.047µF 25V K 15pF 50V J 0.01µF 50V K 0.22µF 16V Z 47µF 25V M 0.22µF 16V Z

Δ	Symbol No.	Part No.	Part Name	Description
	CAPA	CITOR		
	C1560 C1561 C1562 C1564 C1591 C1606-07 C1616 C1618	QETN1CM-107Z NDC31HJ-561X QETN1HHV-105Z QFV71HJ-104Z NDC31HJ-471X QETN1CM-227Z QETN1HM-105Z QETN1HM-105Z	E CAP. C CAP. E CAP. MF CAP. C CAP. E CAP. E CAP. E CAP.	100µF 16V M 560pF 50V J 1µF 50V M 0.1µF 50V J 470pF 50V J 220µF 16V M 1µF 50V M
	C1628 C1629 C1630 C1632 C1634 C1641-42 C1646-47 C1648-49	QETN1HM-107Z QETN1HM-106Z NCF21HZ-224X NCF21HZ-224X QETM1HM-228 NCF21HZ-224X NCB31HK-103X QETM1VM-108	E CAP. E CAP. C CAP. C CAP. E CAP. C CAP. C CAP. C CAP. C CAP.	100µF 50V M 10µF 50V M 0.22µF 50V Z 0.22µF 50V Z 2200µF 50V M 0.22µF 50V Z 0.01µF 50V K 1000µF 35V M
	C1657 C1658 C1673-74 C1675 C1676-77 C1678-79 C1680 C1681	NCB31HK-103X NDC31HJ-100X NCF31AZ-105X QETNIEM-476Z NDC31HJ-151X NDC31HJ-150X NCF31AZ-105X NCB31HK-332X	C CAP. C CAP. C CAP. E CAP. C CAP. C CAP. C CAP. C CAP. C CAP.	0.01µF 50V K 10pF 50V J 1µF 10V Z 47µF 25V M 150pF 50V J 1µF 50V J 1µF 10V Z 3300pF 50V K
	C1682 C1683 C1684 C1685 C1686 C1687 C1688 C1689	NCB31EK-333X QETN1EM-476Z NCB31HK-332X NCB31EK-333X NCF31AZ-105X QETN1HM-106Z QETN1EM-476Z NCB31CK-104X	CHIP CAP. E CAP. CHIP CAP. CHIP CAP. C CAP. E CAP. E CAP. C CAP. CHIP CAP.	0.033µF 25V K 47µF 25V M 3300pF 50V K 0.033µF 25V K 1µF 10V Z 10µF 50V M 47µF 25V M 0.1µF 16V K
	C1691 C1692 C1693-94 C1695 C1696 C1697 C1698 C1699	NCB31EK-393X NDC31HJ-100X QETM1EM-476Z NCF31AZ-105X NCB31EK-393X NCB31HK-103X NCF31AZ-105X NCB31HK-103X	CHIP CAP. C CAP. E CAP. C CAP. C CHIP CAP. C CAP. C CAP. C CAP.	0.039µF 25V K 10pF 50V J 47µF 25V M 1µF 10V Z 0.039µF 25V K 0.01µF 50V K 1µF 10V Z 0.01µF 50V K
	C1701 C1702 C1951 C1952-53 C1954 C1955 C1956	QETN1HM-106Z NCB31CK-563X QETN1CM-477Z NCB31CK-104X QETN1AM-477Z QETN1AM-227Z QETN1AM-107Z	E CAP. CHIP CAP. E CAP. CHIP CAP. E CAP. E CAP. E CAP. E CAP.	10µF 50V M 0.056µF 16V K 470µF 16V M 0.1µF 16V K 470µF 10V M 220µF 10V M 100µF 10V M
	COIL			
	L1001 L1002-03 L1004 L1101 L1102 L1111 L1112 L1301-02	QQL244K-270Z QQL244K-100Z MQL092K-100X QRN143J-0R0X QQL244K-4R7Z QQL244K-220Z QQL244K-180Z MQL092K-1R5X	PEAKING COIL COIL INDUCTOR C R COIL PEAKING COIL COIL COIL COIL	$\begin{array}{ccc} 10 \mu \text{H} & \text{K} \\ 0.0 \Omega & 1/4 \text{W} & \text{J} \\ 4.7 \mu \text{H} & \text{K} \\ 18 \mu \text{H} & \text{K} \end{array}$
	L1951	QQL26AM-5R6Z	CHOKE COIL	
_	DIOD	E		
	D1317-18 D1471-74 D1521 D1591 D1592 D1602 D1610-11 D1614-15	MA111-X MA111-X MA111-X MA111-X MA3051/M/-X MA111-X MA111-X MA111-X	SI.DIODE SI.DIODE SI.DIODE SI.DIODE ZENER DIODE SI.DIODE SI.DIODE SI.DIODE	
	D1617 D1619-20	MA111-X MA3330/L/-X	SI.DIODE ZENER DIODE	

⚠	Symbol No.	Part No.	Part Name	Des	cripti	on
	DIOD	E				
	D1771-74 D1951 D1981-82	MA3056/M/-X 1SR35-400A-T5 MA111-X	ZENER DIODE SI.DIODE SI.DIODE			
	TRAN	SISTOR	₹			
	Q1101-02 Q1471-72 Q1561 Q1562 Q1601-02 Q1604-05 Q1606 Q1607	25C2412K/QR/-X 25C2412K/QR/-X 25C2412K/QR/-X 25A1037AK/QR/-X 25A1037AK/QR/-X DTC124EKA-X 25C2412K/QR/-X DTA124EKA-X	SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR DIGI.TRANSISTOR SI.TRANSISTOR DIGI.TRANSISTOR DIGI.TRANSISTOR			
	Q1615 Q1616-17	2SA1037AK/QR/-X DTC323TK-X	SI.TRANSISTOR DIGI.TRANSISTOR			
	IC					
	IC1101 IC1301 IC1402 IC1471 IC1551 IC1601 IC1662 IC1663	MSP3415DQGB3GHX SDA9380 BA10324AF-XE UPC35862-XE LA6515 TA8246AH BA4558F-X NJM2150AM-X	I.C. (MONO-ANA) I C I C I.C. (MONO-ANA) I.C. (MONO-ANA) I.C. (HYBRID) I.C. (MONO-ANA) I.C. (MONO-ANA)			
	IC1665 IC1701 IC1951 IC1952	BA10324AF-XE JLC1562BF-X BA09T BA08T	I C I.C.(DIGI-MOS) I.C.(MONO-ANA) I.C.(MONO-ANA)			
	OTHE	RS				
	J1001 K1001 K1101-02 K1301 K1601-02 LC1102 LC1301-03 TU1001	QNN0296-001 NQR0389-003X NQR0389-003X NQR0413-003X CE42681-001Y NQR0431-001X NQR0431-001X QAU0188-003	PIN JACK FERRITE BEADS FERRITE BEADS CHIP BEADS BEADS CORE EMI FILTER EMI FILTER TUNER			
	X1101 X1501 Y1612-13	CE42546-001Z QAX0549-001Z NCF21CZ-105X	CRYSTAL CRYSTAL C CAP.	1μF	16V	Z

■ POWER & DEF. P.W. BOARD ASS'Y (SMF-2002A-U2)

Λ	Symbol No.	JO2A-U2) Part No.	Part Name	Description
	RESI	STOR		
	R2401-02 R2403 R2404 R2405 R2406 R2407-08 R2409 R2410	QRE141J-562Y QRE141J-222Y QRX01GJ-1R0 QRL029J-151 QRE141J-222Y QRX01GJ-1R5 QRE141J-823Y QRE141J-103Y	C R C R MF R OM R C R MF R C R	5.6kΩ 1/4W J 2.2kΩ 1/4W J 1.0Ω 1W J 150Ω 2W J 2.2kΩ 1/4W J 1.5Ω 1W J 82kΩ 1/4W J 10kΩ 1/4W J
	R2421 R2422 R2461 R2462 R2463 R2464 R2468 R2469	QRE141J-103Y QRE141J-274Y QRG029J-820 QRE141J-473Y QRE141J-682Y QRX01GJ-3R3 QRE141J-102Y QRE141J-272Y	C R C R OM R C R C R MF R C R	10kΩ 1/4W J 270kΩ 1/4W J 82 Ω 2W J 47kΩ 1/4W J 6.8kΩ 1/4W J 1kΩ 1/4W J 2.7kΩ 1/4W J
	R2471 R2472 R2473 R2474 R2475 R2476 R2477 R2478	QRE141J-391Y QRA14CF-1002Y QRE141J-473Y QRE141J-103Y QRE141J-102Y QRE141J-102Y QRE141J-563Y QRE141J-333Y	C R MF R C R C R C R C R C R C R	390Ω 1/4W J 10kΩ 1/4W F 47kΩ 1/4W J 10kΩ 1/4W J 1kΩ 1/4W J 1kΩ 1/4W J 56kΩ 1/4W J 33kΩ 1/4W J
<u>A</u>	R2501 R2502 R2503 R2504 R2505 R2506 R2521 R2522	QRE141J-471Y QRE141J-123Y QRE121J-152Y QRL039J-272 QRL039J-332 QRE121J-5R6Y QRE121J-471Y QRE141J-223Y	C R C R C R OM R C R C R C R	470Ω 1/4W J 12kΩ 1/4W J 1.5kΩ 1/2W J 2.7kΩ 3W J 3.3kΩ 3W J 5.6Ω 1/2W J 470Ω 1/2W J 22kΩ 1/4W J
	R2523 R2524 R2541 R2542 R2543 R2551 R2552 R2553	QRE141J-103Y QRC121K-152Z QRE141J-182Y QRE141J-222Y QRE121J-272Y QR29022-R47 QR29022-R47 QR29017-4R7	C R COMP.R C R C R F R F R F R	$\begin{array}{ccccc} 10 \text{k}\Omega & 1/4 \text{W} & \text{J} \\ 1.5 \text{k}\Omega & 1/2 \text{W} & \text{K} \\ 1.8 \text{k}\Omega & 1/4 \text{W} & \text{J} \\ 2.2 \text{k}\Omega & 1/4 \text{W} & \text{J} \\ 2.7 \text{k}\Omega & 1/2 \text{W} & \text{J} \\ 0.47 & \Omega & 1 \text{W} & \text{K} \\ 0.47 & \Omega & 1 \text{W} & \text{K} \\ 4.7 & \Omega & 1/4 \text{W} & \text{J} \\ \end{array}$
	R2554 R2561 R2562 R2563 R2581 R2582 R2583 R2584	QRE141J-OROY QRG01GJ-220 QRE121J-123Y QR20056-103Z QRF154K-4R7 QRE141J-681Y QRE121J-682Y QRE141J-183Y	C R OM R C R COMP.R UNF R C R C R C R	0.0Ω 1/4W J 22Ω 1W J 12kΩ 1/2W J 10kΩ 4.7Ω 15W K 680Ω 1/4W J 6.8kΩ 1/2W J 18kΩ 1/4W J
Δ	R2585 R2586 R2587 R2588 R2591 R2901 R2902 R2903	QRE141J-222Y QRA14CF-6801Y QRA14CF-2101Y QRE141J-103Y QRE9017-4R7 QRE121J-331Y QRF054K-3R3 QRF104K-3R9	C R MF R MF R C R C R UNF R UNF R	2.2kΩ 1/4W J 6.8kΩ 1/4W F 2.1kΩ 1/4W F 10kΩ 1/4W J 4.7 Ω 1/4W J 330Ω 1/2W J 3.3Ω 5W K 3.9Ω 10W K
Δ	R2904 R2905-06 R2908-09 R2910 R2911 R2914 R2915 R2916	QRL039J-683 QRE121J-474Y QRL039J-823 QRZ9017-4R7 QRE121J-152Y QRM059J-R10 QRE121J-681Y QRE121J-332Y	OM R C R OM R F R C R MP R C R	68kΩ 3W J 470kΩ 1/2W J 82kΩ 3W J 4.7 Ω 1/4W J 1.5kΩ 1/2W J 0.10Ω 5W J 680Ω 1/2W J 3.3kΩ 1/2W J
	R2932 R2933 R2934 R2935 R2936 R2937 R2941 R2942	QRZ9017-470 QRE121J-272Y QRE121J-564Y QRE141J-472Y QRX01GJ-3R9 QRE121J-681Y QRE121J-331Y QRE121J-471Y	F R C R C R MF R C R C R	47 Ω 1/4W J 2.7kΩ 1/2W J 560kΩ 1/2W J 4.7kΩ 1/4W J 3.9Ω 1W J 680Ω 1/2W J 330Ω 1/2W J 470Ω 1/2W J

⚠	Symbol No.	Part No.	Part Name	Description
	RES I R2943 R2944 R2945 R2946 R2949 R2951 R2951 R2952 R2953 R2954 R2959 R2960	STOR QRE141J-103Y QRE141J-563Y QRE141J-103Y QRE141J-103Y QRE141J-101Y QRE141J-101Y QRE12J-102Y QRE039J-223 QRE141J-474Y QRE141J-103Y QRE141J-103Y QRE039J-R68 QRE141J-103Y	C R C R C R C R C R C R C R C R C R C R	10kΩ 1/4W J 10kΩ 1/4W J 56kΩ 1/4W J 10kΩ 1/4W J 100Ω 1/4W J 10kΩ 1/4W J 1kΩ 1/2W J 2kΩ 3W J 470kΩ 1/4W J 10kΩ 1/4W J 10kΩ 1/4W J 10kΩ 1/4W J
⚠	R2963 R2981 R2982 R2991	QRL039J-561 QRE141J-153Y QRE141J-102Y QRZ0057-825	OM R C R C R C R	560Ω 3W J 15kΩ 1/4W J 1kΩ 1/4W J 8.2MΩ 1W J
_	CAPA	CITOR		
	C2403 C2404 C2405 C2406 C2408 C2409-10 C2411 C2414	QFLC2AJ-104Z QCZ0120-104Z QDC31HJ-820Z QETM1VM-108 QETM1VM-337Z QFV71HJ-474Z QFLC2AJ-104Z QCB31HK-682Z	M CAP. C CAP. C CAP. E CAP. E CAP. MF CAP. M CAP. C CAP.	0.1µF 100V J 0.1µF 25V Z 82pF 50V J 1000µF 35V M 330µF 35V M 0.47µF 50V J 0.1µF 100V J 6800pF 50V K
	C2421 C2461 C2462 C2463 C2464 C2465 C2466 C2467	QETN1HM-105Z QEZ0472-106Z QFM72DJ-152Z QFM72DJ-122Z QCZ012D-104Z QETN1HM-106Z QFP31HJ-272Z QFLC1HJ-102Z	E CAP. E CAP. M CAP. M CAP. C CAP. E CAP. PP CAP. M CAP.	1µF 50V M 10µF 250V M 1500pF 200V J 1200pF 200V J 0.1µF 25V Z 10µF 50V M 2700pF 50V J 1000pF 50V J
	C2468 C2470 C2471 C2501 C2502 C2503 C2521 C2522	QETN1EM-476Z QCS31HJ-470Z QFLC1HJ-103Z QCB32HK-331Z QFM720K-103 QFV71HJ-224Z QFZ0122-112 QFZ0200-113	E CAP. C CAP. M CAP. C CAP. M CAP. MF CAP. MF CAP. MPP CAP.	47μF 25V M 47pF 50V J 0.01μF 50V J 330pF 500V K 0.01μF 200V K 0.22μF 50V J 1100pF1.8kVH±3% 0.011μF1.5kVH±3%
Δ	C2523 C2524 C2525 C2526 C2527 C2528 C2529 C2530	QFM72DK-393 QFP32JJ-183 QFZ0194-914 QFZ0197-104 QFZ0194-154 QFZ0197-104 QFZ0197-104 QCS32HK-561Z	M CAP. PP CAP. MPP CAP. MPP CAP. MPP CAP. MPP CAP. MPP CAP. CAP. MPP CAP.	0.039µF 200V K 0.018µF 630V J 0.91µF 250V J 0.11µF 250V J 0.15µF 250V J 0.15µF 250V J 0.15µF 250V J 560pF 500V K
	C2531 C2532 C2541 C2551 C2552 C2553 C2554 C2555	QFZ0194-534 QETM2CM-227 QENC1HM-105Z QCB32HK-152Z QCB32HK-152Z QCB32HK-152Z QETN1CM-108Z QCB32HK-102Z	MPP CAP. E CAP. BP E CAP. C CAP. E CAP. C CAP. E CAP. C CAP. C CAP. C CAP.	0.53µF 250V J 220µF 160V M 1µF 50V M 1500pF 500V K 1000µF 16V M 1500pF 500V K 1000µF 16V M 1000µF 16V M
	C2556 C2558 C2559 C2561 C2581 C2582 C2583 C2584	QETN2EM-106Z QETN1CM-477Z QEHR1CM-227Z QFLC2AJ-223Z QETN1CM-107Z QETN1EM-476Z QETN2AM-106Z QETN1AM-227Z	E CAP. E CAP. E CAP. M CAP. E CAP. E CAP. E CAP. E CAP. E CAP.	10µF 250V M 470µF 16V M 220µF 16V M 0.022µF 100V J 100µF 16V M 47µF 25V M 10µF 100V M 220µF 10V M
Δ	C2901 C2902 C2903 C2904 C2905 C2906	QFZ9075-473 QFZ9075-104 QFZ9075-473 QCZ9054-472 QCZ9054-472 QCZ9054-472	MPP CAP. MPP CAP. MPP CAP. C CAP. C CAP. C CAP.	0.047µFAC275V M 0.1µFAC275V M 0.047µFAC275V M 4700pFAC250V Z 4700pFAC250V Z 4700pFAC250V Z

⚠	Symbol No.	Part No.	Part Name	Description
	CAPA C2907 C2908 C2909 C2910 C2911 C2912	QEZ0199-227 QCB32HK-103 QCZ0340-391 QETN1HM-476Z QCB31HK-122Z QCZ0340-561	E CAP. C CAP. C CAP. E CAP. C CAP. C CAP.	220µF 400V M 0.01µF 500V K 390pF 2kV K 47µF 50V M 1200pF 50V K 560pF 2kV K
<u>^</u>	C2914 C2916 C2931 C2932 C2933 C2934 C2936 C2937 C2938 C2938 C2939	QCB31HK-471Z QCB32HK-152Z QC29054-472 QC29054-472 QC29054-472 QETM26M-226 QC20340-151 QETM1HM-475Z QETM1HM-475Z QFLC1HJ-103Z	C CAP. C CAP. C CAP. C CAP. C CAP. C CAP. E CAP. C CAP. C CAP. E CAP. M CAP. M CAP.	470pF 50V K 1500pF 500V K 4700pFAC250V Z 4700pFAC250V Z 270pFAC250V Z 22µF 400V M 150pF 2kV K 4.7µF 50V M 2200pF 50V K 0.01µF 50V J
	C2940 C2941 C2942 C2951 C2952 C2954 C2959 C2960	QCB31HK-471Z QETN1AM-108Z QFLC1HJ-102Z QEZ0203-227 QTMM1EM-228 QETM1VM-228 QFV71HJ-684Z QCZ0131-821	C CAP. E CAP. M CAP. E CAP. E CAP. E CAP. C CAP.	470pF 50V K 1000µF 10V M 1000pF 50V J 220µF 160V M 2200µF 25V M 2200µF 35V M 0.68µF 50V J 820pF 2kV K
<u>^</u>	C2963 C2972 C2974-75 C2976 C2978-79 C2991 C2993	QCB32HK-152Z QETN1CM-108Z QEZ0256-128 QETN1CM-108Z QEZ0256-128 QCZ9079-222 QCZ9079-471	C CAP. E CAP. E CAP. E CAP. C CAP. C CAP.	1500pF 500V K 1000µF 16V M 1200µF 10V M 1000µF 16V M 1200µF 10V M 2200pFAC250V M 470pFAC250V K
Δ Δ	TRAN T2501 T2521 T2551 T2561 T2901 T2931	QR1111-001 QQR1188-001 QQH0091-002-12 QQR1096-001 QQS0102-001 QQS0101-001	DRIVE TRANSF. PIN TRANSF. FBT DEF. TRANSF. SW TRANSF. SW TRANSF. SW TRANSF.	(SERVICE)With ANODE WIRE
	L2461 L2462 L2521 L2522 L2551 L2552 L2552 L2561 L2901-02	QQLZ030-801 QQLZ028-272 QQLZ031-180 QQR1191-001 QQL2026-540 QQL26AK-220Z QQL2082-272 QQL401K-100Z	INDUCTOR CHOKE COIL CHOKE COIL LINEARITY COIL HEATER CHOKE COIL CHOKE COIL CHOKE COIL	22µН К
	L2903 L2951 L2954-55 L2957 L2958 L2959-60	QQR1200-001 QQL2026-460 QQR1129-001 QQL2026-460 QQL2026-460 QQL26AK-220Z	CHOKE COIL HEATER CHOKE CHOKE COIL HEATER CHOKE HEATER CHOKE COIL	22µН К
	DIOD 02402 02421 02461 02462 02463 02501 02521 02522	15R35-400A-T2 15S133-T2 EU2-T3 15S133-T2 15S133-T2 15S81-T5 V11CA-C1 FMV-3FU-F1	SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE	
	D2523 D2541 D2542 D2551 D2552 D2553 D2582 D2583	MTZJ22B-T2 EU2-T3 MTZJ3.9B-T2 EU2-T3 EU2-T3 RH15-T3 MTZJ7.5B-T2 MTZJ7.5S-T2	ZENER DIODE SI.DIODE ZENER DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE ZENER DIODE ZENER DIODE	

Λ	Symbol No.	Part No.	Part Name	Description
	DIOD	_		
⚠	D2584 D2901 D2902 D2904 D2905 D2906 D2907 D2908	EU2-T3 D35B60 RG1C-LFA1 AU01Z-T2 AU01Z-T2 MTZJ27B-T2 155133-T2 155133-T2	SI.DIODE BRIDGE DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE	
҈҈	D2910 D2912 D2931 D2933 D2934 D2935 D2941 D2943	MTZJ15B-T2 MTZJ27B-T2 S1WB/A/60-4101 AU01Z-T2 AU01Z-T2 15S133-T2 RGP10J-5025-T3 MTZJ7.5B-T2	ZENER DIODE ZENER DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE ZENER DIODE	
	D2944 D2945 D2951 D2952 D2953 D2954 D2958 D2959-60	NJM431L-T 155133-T2 RU4B-F1 FMX-G125 RU4B-F1 FMX-G125 MTZJ33B-T2 RK34-LFC4	I.C. (MONO-ANA) SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE SI.DIODE ZENER DIODE SI.DIODE	
	D2961 D2981 D2984 D2985	15R35-400A-T2 15S133-T2 15S133-T2 15S133-T2	SI. DIODE SI. DIODE SI. DIODE SI. DIODE	
	TRAN	SISTOR	₹	
҈҈	Q2421 Q2422 Q2461 Q2462-63 Q2464 Q2501 Q2521 Q2581	DTC124ESA-T 2SC1740S/QR/-T 2SK2459N-F54 2SC1740S/QR/-T 2SA933AS/QR/-T BSN304-T 2SC5552-RL 2SA1208/ST/Z1-T	DIGI.TRANSISTOR SI.TRANSISTOR F.E.T. SI.TRANSISTOR SI.TRANSISTOR F.E.T. SI.TRANSISTOR F.E.T. SI.TRANSISTOR SI.TRANSISTOR	
	Q2582 Q2583 Q2941-42	DTC144ESA-T 2SC1740S/QR/-T 2SC1740S/QR/-T	DIGI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR	
	IC			
	IC2401 IC2461 IC2551 IC2901 IC2931 IC2951 IC2954 IC2955	LA78041 BA10393 BA12T STR-F6667B/F7 STR-L472/F7 SE140N SI-8050S SI-8033S/F1	I C I.C. (MONO-ANA) I.C. (MONO-ANA) I.C. (HYBRID) I C I.C. (HYBRID) I.C. (HYBRID) I.C. (HYBRID) I.C. (HYBRID)	
	ОТНЕ	RS		
<u>^</u>	CN2010 CN2014 CP2931 CP2941 CP2954 LF2901 TH2901 K2401	QGA2501C5-04Z QGA2501C5-06Z QMF2043-2R0Z-J1 ICP-N25-Y ICP-N75-Y QQR1095-001 QAD0133-9RO QQR0621-002Z	W TO B CONNE EH POST HEADER FUSE I.C.PROTECT I.C.PROTECT LINE FILTER PTC BEADS CORE	
<u>^</u>	K2522-24 K2901 K2952 K2953 K2954 PC2901 PC2931 RY2931	CE41832-001 QR0679-001 QR0621-002Z QR0621-002Z QR0621-002Z PC123FY2 PC123FY2 QSK0099-001	LEAD CORE FERRITE BEADS BEADS CORE BEADS CORE BEADS CORE I.C.(PH.COUPLER) I.C.(PH.COUPLER) RELAY	

■ CRT SOCKET P.W. BOARD ASS'Y (SMF-3001A-U2)

Δ	•	DO1A-U2) Part No.	Part Name	Description
	RESI	STOR		· · · · · · · · · · · · · · · · · · ·
	R3101 R3102 R3103 R3104 R3105 R3106 R3107 R3109	NRSA63J-123X NRSA63J-681X NRSA63J-101X NRSA63J-472X NRSA63J-102X NRSA63J-221X NRSA63J-561X NRSA63J-153X	MG R MG R MG R MG R MG R MG R MG R	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	R3110 R3111 R3112 R3113 R3114 R3115 R3116 R3117	NRSA63J-222X NRSA63J-182X NRSA63J-272X NRSA63J-3152X NRSA63J-152X NRSA63J-820X QRG01GJ-101 NRSA63J-221X	MG R MG R MG R MG R MG R OM R	2.2kΩ 1/16W J 1.8kΩ 1/16W J 2.7kΩ 1/16W J 330Ω 1/16W J 1.5kΩ 1/16W J 82Ω 1/16W J 100Ω 1W J 220Ω 1/16W J
	R3122 R3123 R3124 R3125 R3126 R3127 R3128 R3129-30	NRSA63J-122X QRE121J-563Y NRSA63J-470X QRE121J-563Y NRSA63J-470X NRSA63J-122X NRSA63J-390X QRE121J-2R7Y	MG R C R MG R C R MG R MG R MG R	1.2kΩ 1/16W J 56kΩ 1/2W J 47Ω 1/16W J 56kΩ 1/2W J 47Ω 1/16W J 1.2kΩ 1/16W J 39Ω 1/16W J 2.7Ω 1/2W J
Δ	R3131 R3132 R3133 R3134 R3204-06 R3211 R3223-25 R3227	NRSA63J-390X NRSA63J-121X QRL029J-391 QR29021-561 NRSA63J-272X NRSA63J-154X NRSA63J-272X NRSA63J-103X	MG R MG R OM R F R MG R MG R MG R MG R	39Ω 1/16W J 120Ω 1/16W J 390Ω 2W J 560 Ω 1W J 2.7kΩ 1/16W J 150kΩ 1/16W J 10kΩ 1/16W J
	R3228 R3229-31 R3232-34 R3235-37 R3239 R3241 R3242 R3244	NRSA63J-272X QRL029J-104 NRSA63J-332X QRC121K-152Z QRZ0107-474Z QRZ0107-105Z NRSA63J-103X NRSA63J-102X	MG R OM R MG R COMP.R C R C R MG R MG R	2.7kΩ 1/16W J 100kΩ 2W J 3.3kΩ 1/16W J 1.5kΩ 1/2W K 470kΩ 1/2W K 1.0MΩ 1/2W K 10kΩ 1/16W J 1kΩ 1/16W J
	R3245-47 R3301-02 R3303-04 R3305 R3306 R3310	NRSA63J-562X QRE121J-474Y NRSA63J-223X NRSA63J-562X NRSA63J-392X NRSA63J-0ROX	MG R C R MG R MG R MG R MG R	5.6kΩ 1/16W J 470kΩ 1/2W J 22kΩ 1/16W J 5.6kΩ 1/16W J 3.9kΩ 1/16W J 0.0Ω 1/16W J
	CAPA	CITOR		
	C3102 C3103 C3104 C3106 C3107 C3110 C3111 C3113	NDC31HJ-8R0X NDC31HJ-151X QCB31HK-103Z QETN1HM-335Z QETN1CM-107Z QETN2CM-106Z QCB32HK-472Z QETN2CM-106Z	C CAP. C CAP. C CAP. E CAP. E CAP. E CAP. C CAP. C CAP.	8.0pF 50V J 150pF 50V J 0.01µF 50V K 3.3µF 50V M 100µF 16V M 4700pF 500V K 10µF 160V M
	C3114 C3116-17 C3118 C3120-21 C3201-03 C3204-06 C3207-09 C3210-12	QCB32HK-472Z QETN1AM-107Z QETN1AM-337Z NDC31HJ-221X NDC31HJ-8R0X NCF31CZ-104X QETN1EM-476Z QFK62EK-104Z	C CAP. E CAP. C CAP. C CAP. C CAP. C CAP. C CAP. MM CAP.	4700pF 500V K 100μF 10V M 330μF 10V M 220pF 50V J 8.0pF 50V J 0.1μF 16V Z 47μF 25V M 0.1μF 25V K
_	C3213-15 C3216 C3218 C3219 C3221 C3302	NDC31HJ-181X QETM1CM-107Z QETM2EM-336 QFZ0097-223 QETM2EM-106Z QETM1AM-477Z	C CAP. E CAP. E CAP. MM CAP. E CAP. E CAP.	180pF 50V J 100μF 16V M 33μF 250V M 0.022μF 1250V K 10μF 250V M 470μF 10V M

Δ	Symbol No.	Part No.	Part Name	Description
	COIL	-		
	L3101 L3204	QQL244K-5R6Z QQL26AJ-102Z	COIL	5.6μΗ K 1mH J
	DIOD	Ε		
	D3101-02 D3103 D3104 D3204-06 D3208-10 D3211 D3301 D3303	MA111-X RH15-T3 RH15-T3 EU01N-T2 15R124-400A-T2 MA3062/M/-X MA111-X MA111-X	SI.DIODE	
	TRAN	ISISTOF	₹	
	Q3101 Q3102 Q3103 Q3104 Q3105 Q3108 Q3109 Q3301	25C2412K/QR/-X 25A1037AK/QR/-X 25C1906-T 25C2412K/QR/-X 25C1627A/QY/-T 25A1837 25C4793 25A1037AK/QR/-X	SI.TRANSISTOR	
	IC			
	IC3201-03	TDA6111Q	I.C.(MONO-ANA)	
_	ОТНЕ	RS		
Δ	K3101 K3103-04 K3105 SK3001	CE41492-001Z CE41492-001Z QQR0621-002Z QNZ0380-001	CHOKE COIL CHOKE COIL BEADS CORE C.R.T.SOCKET	

■ FRONT CONTROL P.W. BOARD ASS'Y (SMF-8001A-U2)

Δ	-	Part No.	Part Name	Description
	RESI	STOR		
	R8003 R8004 R8005 R8006 R8008 R8020 R8035 R8039	NRSA63J-102X NRSA63J-222X NRSA63J-221X NRSA63J-102X NRSA63J-102X NRSA63J-822X QRE121J-151Y NRSA63J-331X	MG R MG R MG R MG R MG R MG R MG R	1kΩ 1/16W J 2.2kΩ 1/16W J 220Ω 1/16W J 1.8kΩ 1/16W J 1kΩ 1/16W J 8.2kΩ 1/16W J 150Ω 1/2W J 330Ω 1/16W J
	CAPA	CITOR		
Δ	C8003 C8004 C8019 C8022 C8901	QETN1HM-106Z NCB31CK-104X QETN1CM-107Z QETN1EM-476Z QFZ9040-474	E CAP. CHIP CAP. E CAP. E CAP. MF CAP.	10μF 50V M 0.1μF 16V K 100μF 16V M 47μF 25V M 0.47μFAC275V M
	DIOD	ÞΕ		
	D8007 D8008 D8010 D8011 D8014 D8018	P1241-04 MA111-X SPR-39MVWF MA111-X MA3068/M/-X MA3033-X	C.D.S. SI.DIODE L.E.D. SI.DIODE ZENER DIODE ZENER DIODE	
	TRAN	ISISTO	₹	
	Q8001 Q8002 Q8003-04	2SA1037AK/QR/-X DTC124EKA-X DTA124EKA-X	SI.TRANSISTOR DIGI.TRANSISTOR DIGI.TRANSISTOR	
	IC			
	IC8001	GP1U281Q	IFR DETECT UNIT	
_	OTHE	RS		
<u>A</u>	LF8901 F8901 S8901	CM35921-005-H LC30349-001A-H CEMG002-001Z QQR1095-001 QMF51D2-3R15J1 QSW0824-001	CDS HOLDER L.E.D.HOLDER FUSE CLIP LINE FILTER FUSE PUSH SWITCH	(×2)

■ SIDE CONTROL P.W. BOARD ASS'Y (SMF-8101A-U2)

∆ Symbol No.	Part No.	Part Name	Description
RES	ISTOR		_
R8001-02 R8010 R8012-13 R8021-22	QRE121J-271Y NRSA63J-103X NRSA63J-103X NRSA63J-102X	C R MG R MG R MG R	270Ω 1/2W J 10kΩ 1/16W J 10kΩ 1/16W J 1kΩ 1/16W J
CAP	ACITOR	2	_
C8001-02 C8003 C8010-11 C8021	NCB31HK-103X NDC31HJ-680X NCB31HK-472X NCB31CK-104X	C CAP. C CAP. C CAP. CHIP CAP.	0.01µF 50V K 68pF 50V J 4700pF 50V K 0.1µF 16V K
COI	L		_
L8001 L8002-03 L8010-11 L8012	QQR0716-001Z QQL244K-5R6Z QQL244K-270Z QQR0716-001Z	LEAD CORE COIL PEAKING COIL LEAD CORE	5.6µН К
ОТН	ERS		
LC8002 J8001 J8003 S8001 S8002 S8003	NQR0169-001X QNS0169-001 QNZ0438-001 QSW0619-003Z QSW0619-003Z QSW0619-003Z	EMI FILTER PIN JACK JACK PUSH SWITCH PUSH SWITCH PUSH SWITCH	MENU CH DOWN CH UP

■MICON P.W. BOARD ASS'Y (SMF0M001A-U2)

<u> </u>	No. Part No.	Part Name	Description
RE	SISTOR		
R0001 R0002 R0003 - 01 R0006 R0007 - 01 R0009 - 11 R0012 R0013	NRSA63J-152X NRSA63J-102X	MG R MG R MG R MG R MG R MG R MG R	1k\(\Omega\) 1/16\(\mathbf{W}\) J 100\(\mathbf{k}\Omega\) 1/16\(\mathbf{W}\) J 1.5\(\mathbf{k}\Omega\) 1/16\(\mathbf{W}\) J 1\(\mathbf{k}\Omega\) 1/16\(\mathbf{W}\) J 10\(\mathbf{k}\Omega\) 1/16\(\mathbf{W}\) J 27\(\mathbf{k}\Omega\) 1/16\(\mathbf{W}\) J 220\(\Omega\) 1/16\(\mathbf{W}\) J
R0014 R0015 R0016-1 R0018-2 R0022 R0024 R0027 R0030		MG R MG R MG R MG R MG R MG R MG R	1kΩ 1/16W J 47kΩ 1/16W J 10kΩ 1/16W J 1kΩ 1/16W J 4.7kΩ 1/16W J
R0032 R0034-5. R0055-7' R0087 R0089-9. R0092 R0093 R0094	7 NRSA63J-OROX NRSA63J-221X	MG R MG R MG R MG R MG R MG R MG R	4.7kΩ 1/16W J 0.0Ω 1/16W J 0.0Ω 1/16W J 220Ω 1/16W J 220Ω 1/16W J 4.7kΩ 1/16W J 220Ω 1/16W J 4.7kΩ 1/16W J
R0095 R0096 R0097 R0098 R0099 R0100-00 R0103-00 R0107		MG R MG R MG R MG R MG R MG R MG R	47kΩ 1/16W J 220Ω 1/16W J 1kΩ 1/16W J 0.0Ω 1/16W J 1kΩ 1/16W J 1kΩ 1/16W J 1kΩ 1/16W J 10kΩ 1/16W J 1kΩ 1/16W J 1kΩ 1/16W J
R0110 R0111 R0112 R0113-14 R0119 R0120 R0121 R0122	NRSA63J-102X NRSA63J-103X NRSA63J-102X 4 NRSA63J-103X NRSA63J-563X NRSA63J-332X NRSA63J-182X NRSA63J-103X	MG R MG R MG R MG R MG R MG R	1kΩ 1/16W J 10kΩ 1/16W J 1kΩ 1/16W J 10kΩ 1/16W J 10kΩ 1/16W J 56kΩ 1/16W J 3.3kΩ 1/16W J 1.8kΩ 1/16W J 10kΩ 1/16W J
R0123 R0124 R0125-26 R0129 R0130 R0131 R0133 R0135	NRSA63J-682X NRSA63J-101X NRSA63J-472X NRSA63J-823X NRSA63J-104X NRSA63J-0ROX NRSA63J-0ROX NRSA63J-102X	MG R MG R MG R MG R MG R MG R MG R	6.8kΩ 1/16W J 100Ω 1/16W J 4.7kΩ 1/16W J 82kΩ 1/16W J 100kΩ 1/16W J 0.0Ω 1/16W J 0.0Ω 1/16W J 1kΩ 1/16W J
R0136 R0137-31 R0144 R0147 R0151 R0152-54 R0155-56	NRSA63J-103X NRSA63J-472X NRSA63J-183X NRSA63J-221X	MG R MG R MG R MG R MG R MG R MG R	10kΩ 1/16W J 2.2kΩ 1/16W J 10kΩ 1/16W J 4.7kΩ 1/16W J 18kΩ 1/16W J 220Ω 1/16W J 100Ω 1/16W J 0.0Ω 1/16W J
R0158 R0161 R0162 R0163	NRSA63J-221X NRSA63J-102X NRSA63J-153X NRSA63J-682X	MG R MG R MG R MG R	220Ω 1/16W J 1kΩ 1/16W J 15kΩ 1/16W J 6.8kΩ 1/16W J
CA	PACITOR	₹	
C0001 C0002 C0003 C0004 C0005-0 C0007 C0008 C0012-1	NEH71CM-476X NCB11CK-225X	E CAP. C CAP. CHIP CAP. E CAP. CHIP CAP. E CAP. CHIP CAP. C CAP. C CAP.	470µF 6.3V M 0.1µF 16V Z 2.2µF 16V K 1000µF 6.3V M 2.2µF 16V K 47µF 16V M 2.2µF 16V K 0.1µF 16V Z

∆ S	Symbol No.	Part No.	Part Name	Description
_	CAPA	CITOR		•
0 0 0 0 0	00014 00017 00019 00020 00021 00022 00023	NCB31HK-682X NDC31HJ-150X NEH71CM-476X NCF31CZ-104X NEH71CM-476X NCF31AZ-105X NCB31EK-333X NCF31CZ-104X	CHIP CAP. C CAP. E CAP. C CAP. E CAP. C CAP. C CAP. C CAP. C CAP. C CAP.	6800pF 50V K 15pF 50V J 47µF 16V M 0.1µF 16V Z 47µF 16V Z 1µF 10V Z 0.033µF 25V K 0.1µF 16V Z
0 0 0 0 0	00027-28 00029 00030-32 00034-39 00040 00041 00042-43	NEH71CM-476X NDC31HJ-151X NCF31CZ-104X NCF31CZ-104X NDC31HJ-330X NDC31HJ-270X NCF31CZ-104X NCF31CZ-104X	E CAP. C CAP.	47µF 16V M 150pF 50V J 0.1µF 16V Z 0.1µF 16V Z 33pF 50V J 27pF 50V J 0.1µF 16V Z 0.1µF 16V Z
0 0 0 0	0048 0049-50 0051 0052-57 0059-61 0062 0063-65	NEH71CM-476X NCF31CZ-104X NEH71CM-476X NCF31CZ-104X NEH71CM-106X NCF31CZ-104X NDC31HJ-820X NEH71HM-225X	E CAP. C CAP. E CAP. C CAP. E CAP. C CAP. C CAP. C CAP. C CAP. C CAP.	47µF 16V M 0.1µF 16V Z 47µF 16V M 0.1µF 16V Z 10µF 16V M 0.1µF 16V Z 82pF 50V J 2.2µF 50V M
	COIL			
L L L L	.0001 .0003 .0005-08 .0009 .0010-14 .0015-16 .0017-22	NQL092K-4R7X NQL092K-4R7X NQL092K-4R7X NQL034K-4R7X NQL092K-4R7X NQL034K-4R7X NQL034K-4R7X NQL092K-1R5X	CHIP INDUCTOR	
	DIOD	E		
D D D	00001-02 00003 00004 00005-08	MA111-X MA3068/M/-X MA3027-X MA3056/M/-X MA3068/M/-X	SI.DIODE ZENER DIODE ZENER DIODE ZENER DIODE ZENER DIODE ZENER DIODE	
	TRAN	SISTOR	2	
Q	00001-02 00007-08 00009-12	2SC2712/YG/-X 2SA1162/YG/-X 2SC2712/YG/-X	SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR	
	IC			
I I I I I	CC0001 CC0003 CC0004 CC0005 CC0012 CC0901 CC0902	SDA6000 K45161622D-TC80 AT24C32-28L2EU S-80828ANNP-W MX23L1610TC1001 TA48M035F-X TA48M033F-X MM1437AF-X	I C I.C. (D-RAM) I.C. I C I C I.C. (M) I.C. (M) I.C. (MONO-ANA)	(SERVICE)
_	ОТНЕ	RS		
L K K K K	00001 00001 00002 00001 00002 00003 00004 00005	QGB1505K1-50 NQR0313-007X NQR0431-001X NQR0360-002X NQR0360-003X NRSA63J-0R0X NQR0389-003X NRSA63J-0R0X	CONNECTOR EMI FILTER EMI FILTER EMI FILTER FERRITE BEADS FERRITE BEADS MG R FERRITE BEADS MG R	0.0Ω 1/16W J 0.0Ω 1/16W J
X	(0001	QAX0669-001Z	XTAL	

■ AV SW P.W. BOARD ASS'Y (SMF0S002A-U2)

<u> </u>	Part No.	Part Name	Description
RESI	STOR		
R0101-09 R0110-11 R0112-13 R0114 R0115 R0116 R0117 R0118	NRSA63J-750X NRSA63J-103X NRSA63J-823X NRSA63J-333X NRSA63J-473X NRSA63J-823X NRSA63J-223X NRSA63J-223X	MG R MG R MG R MG R MG R MG R MG R	75Ω 1/16W J 10kΩ 1/16W J 82kΩ 1/16W J 33kΩ 1/16W J 47kΩ 1/16W J 82kΩ 1/16W J 22kΩ 1/16W J 47kΩ 1/16W J
R0119 R0120 R0121 R0122 R0123 R0124 R0125 R0126	NRSA63J-153X NRSA63J-273X NRSA63J-222X NRSA63J-473X NRSA63J-823X NRSA63J-153X NRSA63J-223X NRSA63J-23X	MG R MG R MG R MG R MG R MG R MG R	15kΩ 1/16W J 27kΩ 1/16W J 2.2kΩ 1/16W J 47kΩ 1/16W J 82kΩ 1/16W J 15kΩ 1/16W J 22kΩ 1/16W J 47kΩ 1/16W J
R0127 R0128-29 R0130-31 R0132 R0133 R0134 R0135 R0136	NRSA63J-273X NRSA63J-823X NRSA63J-391X NRSA63J-222X NRSA63J-333X NRSA63J-222X NRSA63J-333X NRSA63J-103X	MG R MG R MG R MG R MG R MG R MG R	27kΩ 1/16W J 82kΩ 1/16W J 390Ω 1/16W J 2.2kΩ 1/16W J 33kΩ 1/16W J 2.2kΩ 1/16W J 33kΩ 1/16W J 10kΩ 1/16W J
R0137 R0138-39 R0140 R0141 R0142 R0143-44 R0145 R0146	NRSA63J-222X NRSA63J-333X NRSA63J-222X NRSA63J-322X NRSA63J-222X NRSA63J-333X NRSA63J-333X NRSA63J-473X	MG R MG R MG R MG R MG R MG R MG R	2.2kΩ 1/16W J 33kΩ 1/16W J 2.2kΩ 1/16W J 33kΩ 1/16W J 2.2kΩ 1/16W J 33kΩ 1/16W J 10kΩ 1/16W J 47kΩ 1/16W J
R0147 R0148-49 R0150-51 R0152-67 R0168 R0169 R0170 R0171	NRSA63J-223X NRSA63J-391X NRSA63J-104X NRSA63J-101X NRSA63J-750X NRSA63J-222X NRSA63J-333X NRSA63J-750X	MG R MG R MG R MG R MG R MG R MG R	22kΩ 1/16W J 390Ω 1/16W J 100kΩ 1/16W J 100Ω 1/16W J 75Ω 1/16W J 2.2kΩ 1/16W J 33kΩ 1/16W J 75Ω 1/16W J
R0172 R0173 R0174 R0175 R0176 R0177 R0178 R0179	NRSA63J-222X NRSA63J-333X NRSA63J-750X NRSA63J-333X NRSA63J-103X NRSA63J-823X NRSA63J-153X NRSA63J-473X	MG R MG R MG R MG R MG R MG R MG R	2.2kΩ 1/16W J 33kΩ 1/16W J 75Ω 1/16W J 33kΩ 1/16W J 10kΩ 1/16W J 10kΩ 1/16W J 15kΩ 1/16W J 47kΩ 1/16W J
R0180 R0181-82 R0183-84 R0185-90 R0191 R0192 R0194-95 R0196	NRSA63J-273X NRSA63J-562X NRSA63J-102X NRSA63J-101X NRSA63J-222X NRSA63J-101X NRSA63J-221X QRG01GJ-101	MG R MG R MG R MG R MG R MG R MG R	27kΩ 1/16W J 5.6kΩ 1/16W J 1kΩ 1/16W J 100Ω 1/16W J 2.2kΩ 1/16W J 2.00Ω 1/16W J 220Ω 1/16W J 100Ω 1/16W J 100Ω 1W J
R0197 R0198 R0199 R0200 R0201 R0203-05	QRK126J-181X NRSA63J-750X NRSA63J-101X NRSA63J-750X QRK126J-151X NRSA63J-750X	C R MG R MG R MG R C R MG R	180Ω 1/2W J 75Ω 1/16W J 100Ω 1/16W J 75Ω 1/16W J 150Ω 1/2W J 75Ω 1/16W J
CAPA	CITOR		
C0101-10 C0111-12 C0113-14 C0115-17 C0118-19 C0120 C0121	NCB31HK-472X QETN1CM-477Z NCB31HK-102X QETN1HM-106Z QETN1HM-105Z NCB31HK-103X QETN1HM-105Z	C CAP. E CAP. C CAP. E CAP. E CAP. C CAP. C CAP.	4700pF 50V K 470μF 16V M 1000pF 50V K 10μF 50V M 1μF 50V M 0.01μF 50V K 1μF 50V M

⚠	Symbol No.	Part No.	Part Name	Description
	CAPA	CITOR		
	C0122 C0123 C0124 C0125 C0126-28 C0129 C0130 C0131	QETN1HM-106Z QETN1HM-105Z NCB31HK-103X NCB31HK-102X QETN1HM-106Z QETN1HM-105Z NCB31HK-103X QETN1HM-105Z	E CAP. E CAP. C CAP. C CAP. E CAP. E CAP. E CAP. C CAP. E CAP.	10μF 50V M 1μF 50V M 0.01μF 50V K 1000pF 50V K 10μF 50V M 1μF 50V M 0.01μF 50V K 1μF 50V M
	C0132 C0133 C0134 C0135 C0136 C0137 C0138-39 C0140	NCB31HK-103X QETN1HM-106Z QETN1HM-105Z QETN1HM-106Z QETN1HM-105Z NCB31HK-103X QENC1HM-105Z QENC1HM-105Z	C CAP. E CAP. E CAP. E CAP. C CAP. C CAP. BP E CAP. BP E CAP.	0.01µF 50V K 10µF 50V M 1µF 50V M 10µF 50V M 1µF 50V M 0.01µF 50V K 1µF 50V M 10µF 25V M
	C0141-47 C0148 C0149 C0150-51 C0152 C0153 C0154 C0155	NCB31HK-103X QETN1HM-106Z QENC1EM-106Z QETN1CM-107Z QETN1CM-477Z NCB31HK-103X QETN1CM-107Z NDC31HJ-150X	C CAP. E CAP. BP E CAP. E CAP. E CAP. C CAP. C CAP. C CAP.	0.01µF 50V K 10µF 50V M 10µF 25V M 100µF 16V M 470µF 16V M 0.01µF 50V K 100µF 16V M 15pF 50V J
	COIL	-		
	L0101	QQR0716-001Z	LEAD CORE	
	DIOD	ΡE		
	D0101-04 D0109-13 D0114 D0115-17	MA3056/M/-X MA3120/M/-X MA3039/H/-X MA3056/M/-X	ZENER DIODE ZENER DIODE ZENER DIODE ZENER DIODE	
	TRAN	SISTOR	₹	
	Q0101-02 Q0103-05 Q0106-09 Q0110 Q0111 Q0112 Q0113-15 Q0116	2SC2412K/QR/-X DTC323TK-X 2SC2412K/QR/-X 2SA1037AK/QR/-X DTSA1037AK/QR/-X 2SA1037AK/QR/-X 2SC2412K/QR/-X 2SA933AS/QR/-T	SI.TRANSISTOR DIGI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR DIGI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR	
	Q0117	2SC1740S/QR/-T	SI.TRANSISTOR	
_	IC			
	IC0101	CXA20690	I C	
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	CN0001 J0001 J0002 K0101-04	QGB1505K1-50 QNZ0465-001 QNZ0463-001 CE42681-001Y	CONNECTOR PIN CONNECTOR PIN CONNECTOR BEADS CORE	

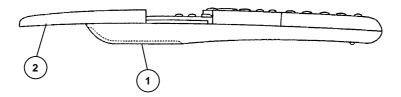
■100Hz P.W. BOARD ASS'Y (SMF0Z004A-U2)

⚠ Symbol No.	Part No.	Part Name	Description
RESI	STOR		
R0001-06 R0008-09 R0010-12 R0101 R0102-03 R0104 R0105-06 R0107-13	NRSA63J-OROX NRSA63J-OROX NRSA63J-101X NRSA63J-332X NRSA63J-222X NRSA63J-332X NRSA63J-750X	MG R MG R MG R MG R MG R MG R MG R	$\begin{array}{ccccc} 0.0\Omega & 1/16W & J \\ 0.0\Omega & 1/16W & J \\ 100\Omega & 1/16W & J \\ 3.3k\Omega & 1/16W & J \\ 2.2k\Omega & 1/16W & J \\ 3.3k\Omega & 1/16W & J \\ 2.2k\Omega & 1/16W & J \\ 75\Omega & 1/16W & J \\ \end{array}$
R0122-23 R0124-25 R0132-39 R0141 R0201 R0202-03 R0204-05 R0214	NRSA63J-0ROX NRSA63J-101X NRSA63J-100X NRSA63J-100X NRSA63J-121X NRSA63J-101X NRSA63J-0ROX NRSA63J-0ROX	MG R MG R MG R MG R MG R MG R MG R	$\begin{array}{ccccc} 0.0\Omega & 1/16W & J \\ 100\Omega & 1/16W & J \\ 10\Omega & 1/16W & J \\ 10\Omega & 1/16W & J \\ 120\Omega & 1/16W & J \\ 120\Omega & 1/16W & J \\ 100\Omega & 1/16W & J \\ 0.0\Omega & 1/16W & J \\ 0.0\Omega & 1/16W & J \\ \end{array}$
R0217 R0218 R0219 R0220 R0223 R0225 R0251 R0252	NRSA63J-103X NRSA63J-333X NRSA63J-103X NRSA63J-822X NRSA63J-473X NRSA63J-0ROX NRSA63J-222X NRSA63J-750X	MG R MG R MG R MG R MG R MG R MG R	10kΩ 1/16W J 33kΩ 1/16W J 10kΩ 1/16W J 8.2kΩ 1/16W J 47kΩ 1/16W J 0.0Ω 1/16W J 2.2kΩ 1/16W J 75Ω 1/16W J
R0254 R0255-56 R0257 R0258 R0259 R0261 R0264 R0271	NRSA63J-391X NRSA63J-221X NRSA63J-271X NRSA63J-272X NRSA63J-472X NRSA63J-222X NRSA63J-391X NRSA63J-222X	MG R MG R MG R MG R MG R MG R MG R	390Ω 1/16W J 220Ω 1/16W J 270Ω 1/16W J 2.7kΩ 1/16W J 4.7kΩ 1/16W J 2.2kΩ 1/16W J 390Ω 1/16W J 2.2kΩ 1/16W J
R0274 R0301-03 R0304-05 R0306-08 R0401 R0402 R0404 R0407	NRSA63J-391X NRSA63J-104X NRSA63J-101X NRSA63J-152X NRSA63J-473X NRSA63J-472X NRSA63J-0R0X NRSA63J-0R0X	MG R MG R MG R MG R MG R MG R MG R	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
R0409	NRSA63J-OROX	MG R	0.0Ω 1/16W J
CAPA	CITOR		
C0001 C0002 C0003 C0004 C0005 C0006 C0007-09 C0101	NCB31CK-104X NEH71CM-476X NCB31CK-104X NEH71CM-476X NCB31CK-104X NCB31CK-104X NEH71CM-476X NDC31HJ-4R0X NEH71CM-106X	CHIP CAP. E CAP. CHIP CAP. E CAP. CHIP CAP. E CAP. E CAP. C CAP. E CAP.	$\begin{array}{cccc} 0.1\mu F & 16V & K \\ 47\mu F & 16V & M \\ 0.1\mu F & 16V & K \\ 47\mu F & 16V & M \\ 0.1\mu F & 16V & K \\ 47\mu F & 16V & M \\ 4.0p F & 50V & J \\ 10\mu F & 16V & M \\ \end{array}$
C0102 C0103 C0104 C0105 C0106 C0107 C0108 C0109	NCB31EK-473X NEH71CM-476X NCB31HK-152X NDC31HJ-102X NCB31CK-104X NCF31CZ-224X NCB31HK-152X NDC31HJ-391X	CHIP CAP. E CAP. CHIP CAP. C CAP. CHIP CAP. C CAP. C CAP. C CAP. CHIP CAP. C CAP.	0.047µF 25V K 47µF 16V M 1500pF 50V K 1000pF 50V J 0.1µF 16V K 0.22µF 16V Z 1500pF 50V K 390pF 50V J
C0110 C0111 C0112 C0113-18 C0119-24 C0125-26 C0128 C0129	NEH71CM-106X NCB31EK-473X NDC31HJ-331X NCF31CZ-224X NDC31HJ-331X NDC31HJ-3ROX NCB31CK-104X NCF31CZ-224X	E CAP. CHIP CAP. C CAP.	10µF 16V M 0.047µF 25V K 330pF 50V J 0.22µF 16V Z 330pF 50V J 3.0pF 50V J 0.1µF 16V K 0.22µF 16V Z
C0130 C0131 C0132 C0133 C0134	NDC31HJ-391X NCB31HK-152X NCB31EK-473X NCB31HK-152X NCB31CK-683X	C CAP. CHIP CAP. CHIP CAP. CHIP CAP. CHIP CAP.	390pF 50V J 1500pF 50V K 0.047μF 25V K 1500pF 50V K 0.068μF 16V K

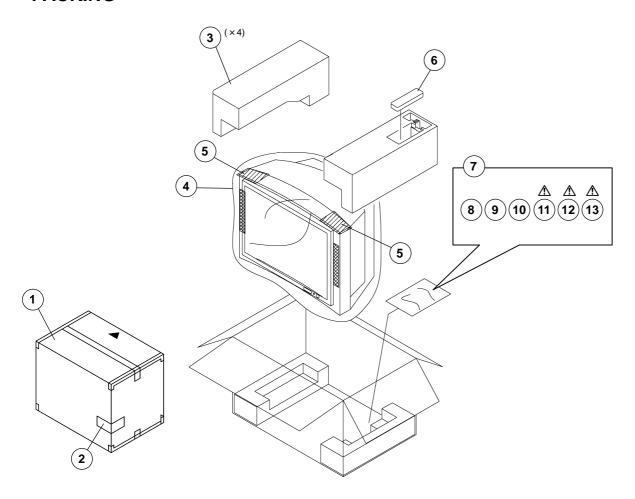
⚠	Symbol No.	Part No.	Part Name	Description
	CAPA	CITOR		
	C0136-37 C0138 C0139 C0140 C0185-86 C0201 C0202-05 C0206	NCB31CK-683X NCB31HK-152X NCB31EK-473X NEH71CM-476X NCB31CK-104X NEH71CM-476X NCB31CK-104X NEH71CM-476X	CHIP CAP. CHIP CAP. CHIP CAP. E CAP. CHIP CAP. E CAP. CHIP CAP. E CAP. CHIP CAP. E CAP.	0.068µF 16V K 1500pF 50V K 0.047µF 25V K 47µF 16V M 0.1µF 16V K 47µF 16V M 0.1µF 16V K 47µF 16V M
	C0207-11 C0212-13 C0214-17 C0218 C0219 C0220-35 C0237-38 C0239-42	NCB31CK-104X NDC31HJ-180X NCB31CK-104X NDC31HJ-561X NDC31HJ-561X NCB31CK-104X NEH71CM-106X NCB31CK-104X	CHIP CAP. C CAP. CHIP CAP. C CAP. E CAP. E CAP. E CAP. CHIP CAP. CHIP CAP.	0.1µF 16V K 18pF 50V J 0.1µF 16V K 560pF 50V J 47µF 16V M 0.1µF 16V K 10µF 16V M 0.1µF 16V K
	C0251 C0252-53 C0254 C0255 C0256 C0261 C0262-63 C0264	NDC31HJ-4ROX NCB31CK-104X NDC31HJ-12OX NDC31HJ-27OX NBC31HJ-27OX NBC31HJ-4ROX NCB31CK-104X NDC31HJ-12OX	C CAP. CHIP CAP. C CAP.	4.0pF 50V J 0.1µF 16V K 12pF 50V J 27pF 50V J 10µF 16V M 4.0pF 50V J 0.1µF 16V K 12pF 50V J
	C0265 C0271 C0272-73 C0274 C0275 C0301 C0302-03 C0402-03	NDC31HJ-270X NDC31HJ-4R0X NCB31CK-104X NDC31HJ-120X NDC31HJ-270X NEH71CM-476X NCB31CK-104X NCB31CK-104X	C CAP. C CAP. CHIP CAP. C CAP. C CAP. E CAP. CHIP CAP. CHIP CAP.	27pF 50V J 4.0pF 50V J 0.1µF 16V K 12pF 50V J 27pF 50V J 47µF 16V M 0.1µF 16V K
	C0404	NDC31HJ-330X	C CAP.	33pF 50V J
	COIL			
	L0001-03 L0101 L0102-08 L0109 L0201-03 L0204 L0205-08 L0209-10	NQL092K-1R5X NQL034K-150X NQL092K-3R3X NQL034K-6R8X NQL034K-100X QQL244K-4R7Z NQL034K-100X NQL092K-1R5X	CHIP INDUCTOR CHIP INDUCTOR CHIP INDUCTOR CHIP INDUCTOR CHIP INDUCTOR COIL CHIP INDUCTOR CHIP INDUCTOR CHIP INDUCTOR CHIP INDUCTOR	4.7µН К
	L0251 L0261 L0271	NQLO92K-5R6X NQLO92K-5R6X NQLO92K-5R6X	CHIP INDUCTOR CHIP INDUCTOR CHIP INDUCTOR	
	DIOD	Е		
	D0401	MA111-X	SI.DIODE	
		SISTOR		
	Q0101-02 Q0201 Q0251-52 Q0253 Q0261 Q0271 Q0301-03	2SA1037AK/QR/-X 2SA1037AK/QR/-X 2SA1037AK/QR/-X 2SC2412K/QR/-X 2SA1037AK/QR/-X 2SA1037AK/QR/-X 2SC2412K/QR/-X	SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR SI.TRANSISTOR	
	IC			
	IC0101 IC0201 IC0202 IC0203 IC0301 IC0401 IC0402	VPC3230D-QA-B3 SAA4979H/V1 0M4994H SAA4955HL/V1 TDA9178T/N1-X S-80828ANNP-W TC7WH34FU-X	I C I C I C I C I C	
	OTHE	RS		
	CN0003 LC0010-12 LC0013 LC0014-15 X0101 X0201	QGB1505K1-50 NQR0313-009X NQR0313-004X NQR0313-007X QAX0655-001Z QAX0273-001Z	CONNECTOR EMI FILTER EMI FILTER EMI FILTER XTAL CRYSTAL	

REMOTE CONTROL UNIT PARTS LIST (RM-C54-1C)

⚠ Ref.No.	Part No.	Part Name	Description
1 2	2AA030733 2AA030732	BATTERY COVER SLIDE COVER	



PACKING



PACKING PARTS LIST

⚠ Ref.No.	Part No.	Part Name	Description			
AV32L2E	AV32L2EUGR / AV32L2EUBL / AV32L2EUGY					
1 2 2 3 4 5 6	AEM1002-071-E AEM1052-019-E AEM1052-061-E AEM1052-072-E LC10859-002A-U AEM1047-002-E AEM4091-001A-U RM-C54-1C	PACKING CASE EURO LABEL EURO LABEL EURO LABEL CUSHION ASSY POLY BAG PROTECT SHEET REMOCON UNIT	[AV32L2EUGR] [AV32L2EUBL] [AV32L2EUGY] 4pcs in 1set 2pcs in 1set			
7 8 9 10 <u></u> 11 九 12 九 13	AEM3021-002-E AEM1059-001A-E BT-54013-1E 3212EU-HSAE LCT0889-001A-U LCT0887-001A-U LCT0888-001A-U	POLY BAG X-RAY CARD WARRANTY CARD S.DIAGRAM INST BOOK INST BOOK INST BOOK	(SERVICE)			

Memo

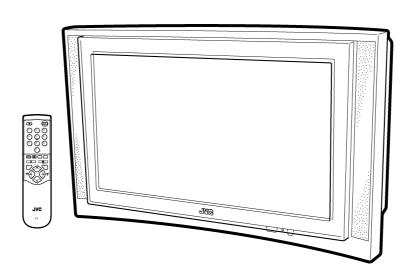
JVC

SCHEMATIC DIAGRAMS

COLOUR TELEVISION

AV32L2EUGR AV32L2EUBL AV32L2EUGY

CD-ROM No.SML200106



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BASIC CHASSIS

MF

STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1. SAFETY

The components identified by the ▲ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal :PAL Colour bar signal

(2)Setting positions of each knob/button and

variable resistor :Original setting position

when shipped

(3)Internal resistance of tester :DC 20k Ω/V

(4)Oscilloscope sweeping time :H \Rightarrow 20 μ S/div

:V \Rightarrow 5mS/div :Others \Rightarrow Sweeping time is

specified

(5)Voltage values :All DC voltage values

* Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

●In the PW board :R1209→R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

■Resistance value

 $\begin{array}{lll} \text{No unit} & : [\Omega] \\ \text{K} & : [\text{K}\Omega] \\ \text{M} & : [\text{M}\Omega] \\ \end{array}$

■Rated allowable power

No indication :1/16[W]
Others :As specified

■Type

No indication :Carbon resistor

OMR :Oxide metal film resistor

MFR :Metal film resistor

MPR :Metal plate resistor

UNFR :Uninflammable resistor

FR :Fusible resistor

*Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

Capacitance value

 $\begin{array}{ll} \mbox{1 or higher} & :[pF] \\ \mbox{less than 1} & :[\mu F] \\ \end{array}$

■Withstand voltage

No indication :DC50[V]

AC indicated :AC withstand voltage [V]
Others :DC withstand voltage [V]

*Electrolytic Capacitors

47/50[Example]:Capacitance value [μ F]/withstand voltage[V]

●Type
No indication
MY
:Mylar capacitor
MM
:Metalized mylar capacitor
PP
:Polypropylene capacitor
MPP
:Metalized polypropylene capacitor
MPP
:Metalized polypropylene capacitor

MF :Metalized film capacitor
TF :Thin film capacitor
BP :Bipolar electrolytic capacitor

:As specified

:Tantalum capacitor

(3)Coils
No unit :[µH]

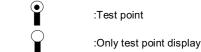
Others
(4)Power Supply

TAN

:B1 :B2 :9V :5V

*Respective voltage values are indicated

(5)Test point



(6)Connecting method



(7)Ground symbol

:ISOLATED(NEUTRAL) side ground

≟ :EARTH ground ☐ :DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

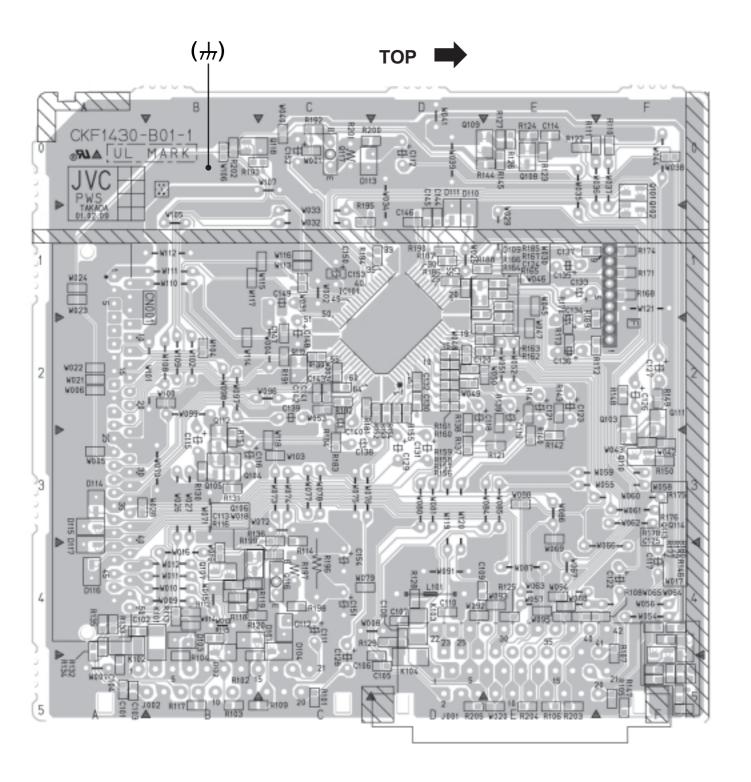
This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE: (\bot) side GND and the ISOLATED(NEUTRAL): (\updownarrow) side GND. Therefore, care must be taken for the following points.

(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

When ordering parts, please use the numbers that appear in the Parts List.

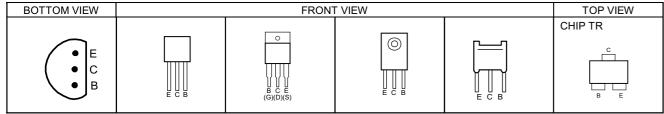


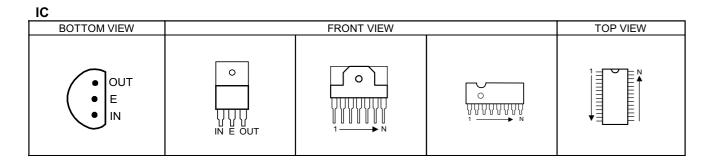
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AV SVI IVETATILAN	-02

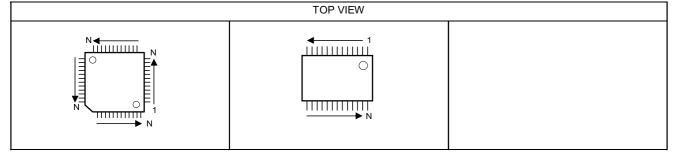
SEMICONDUCTOR SHAPES

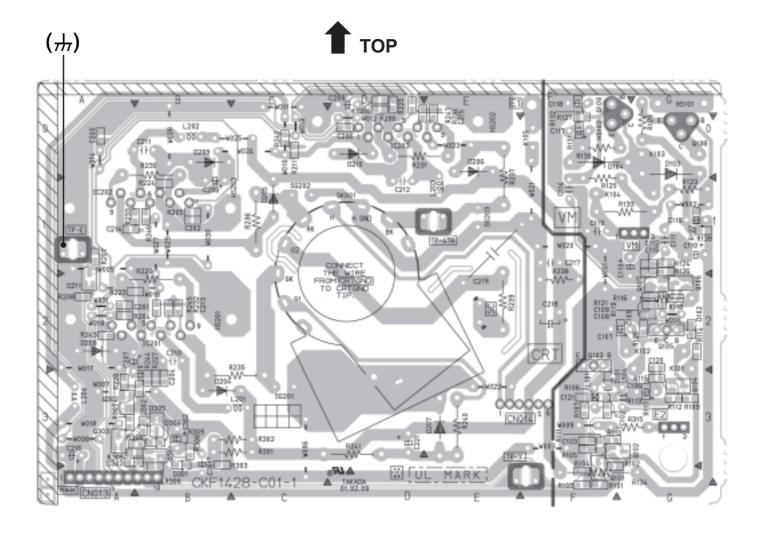
TRANSISTOR



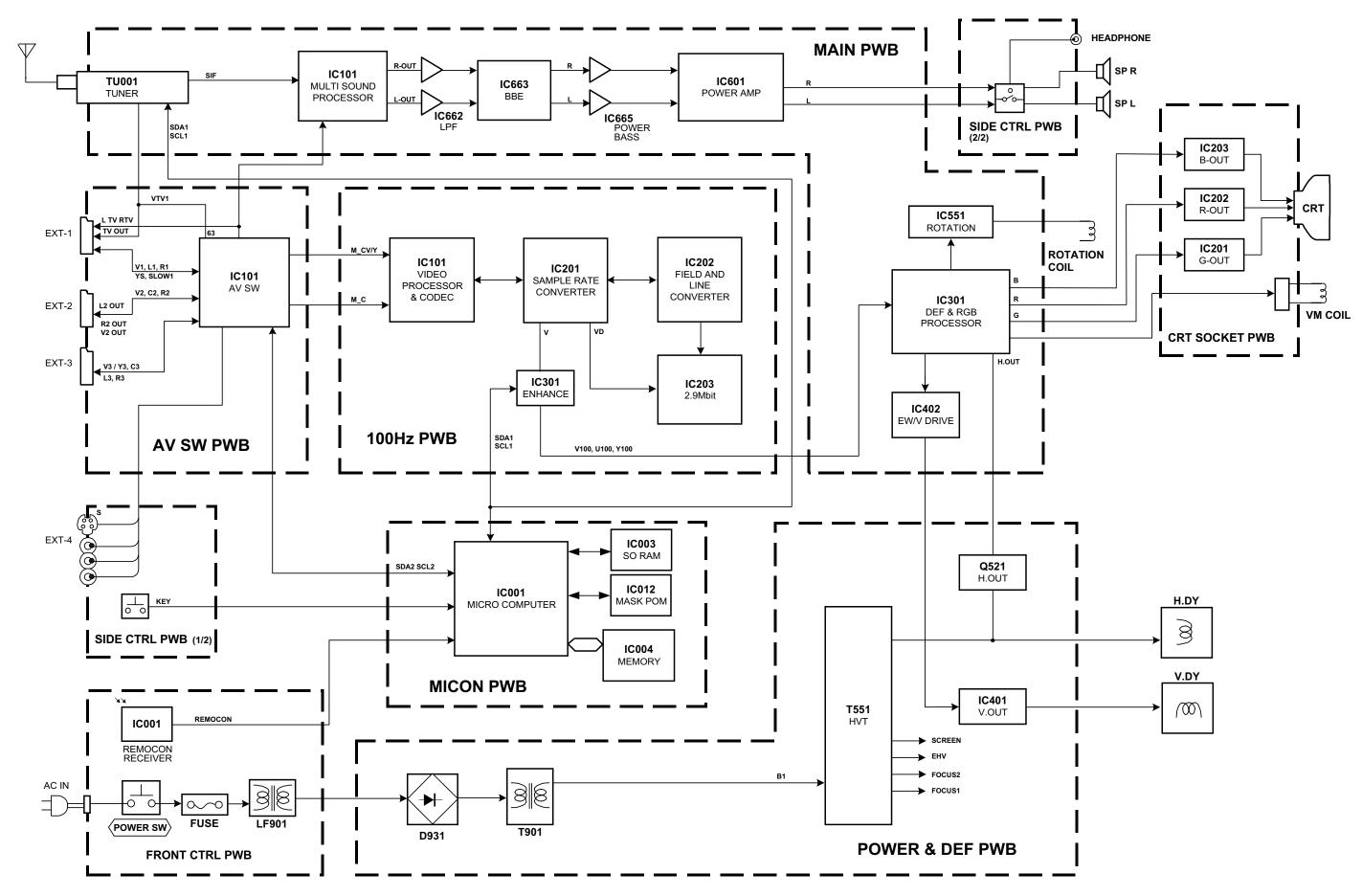


CHIP IC

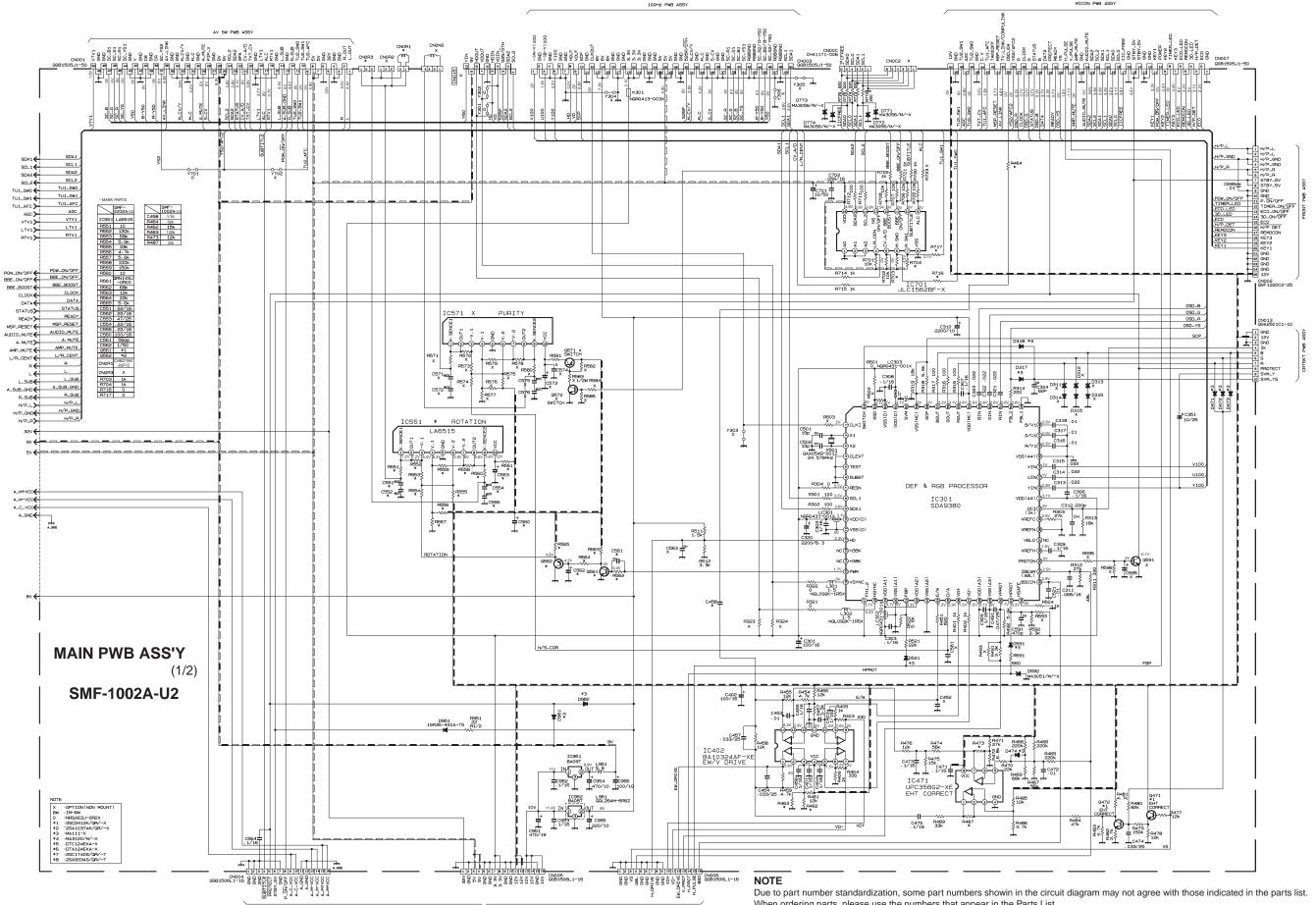


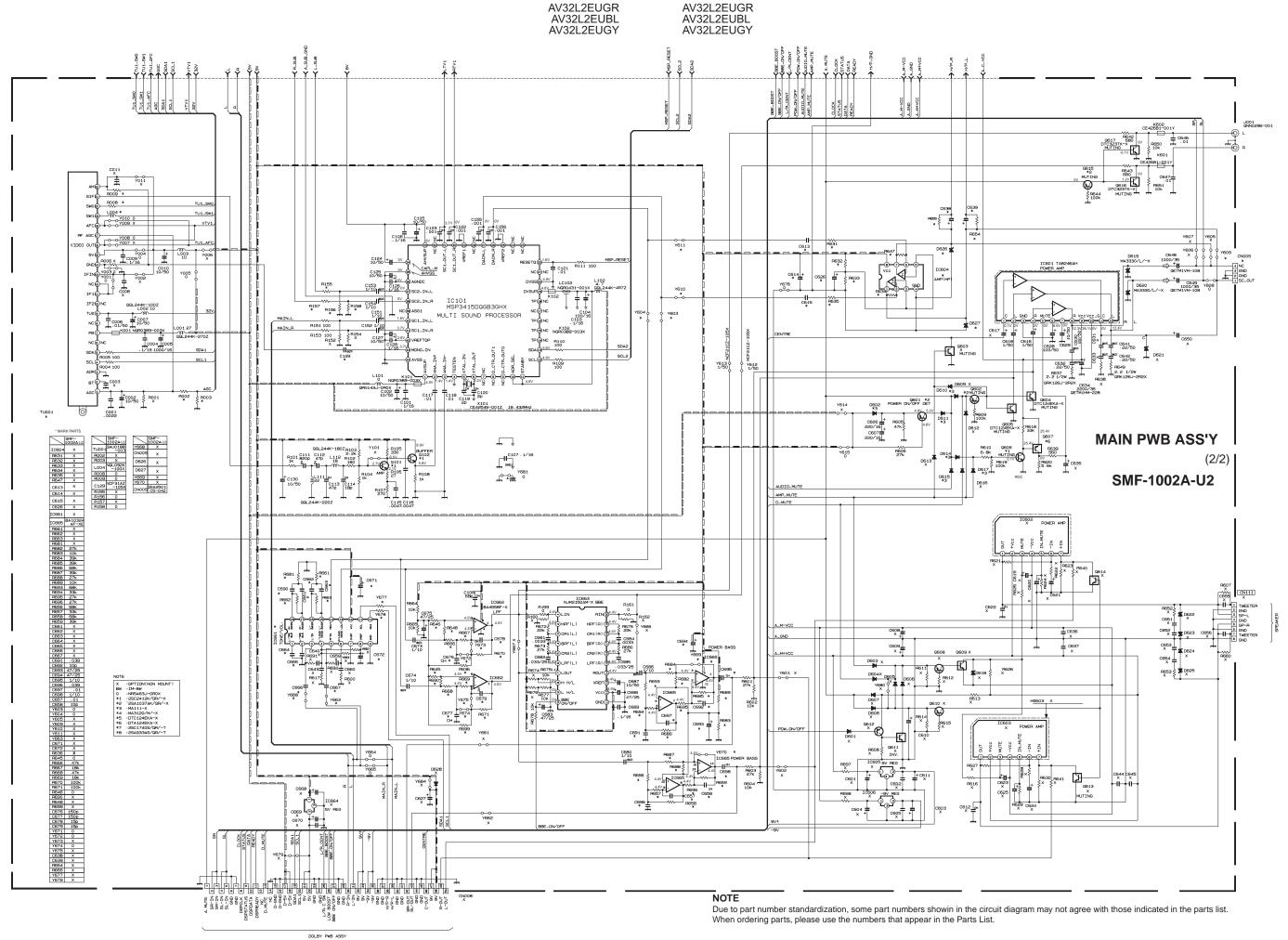


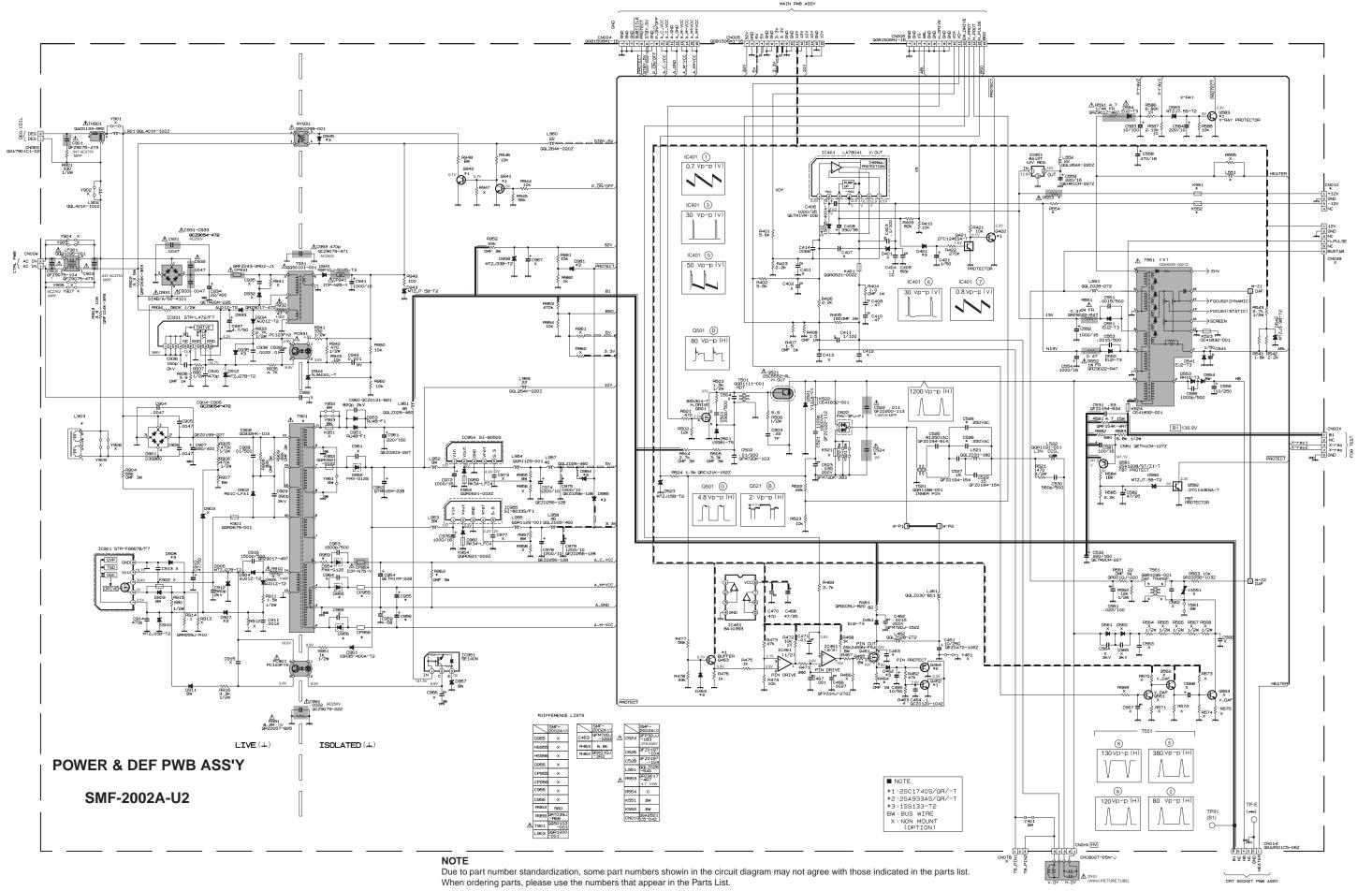
BLOCK DIAGRAM



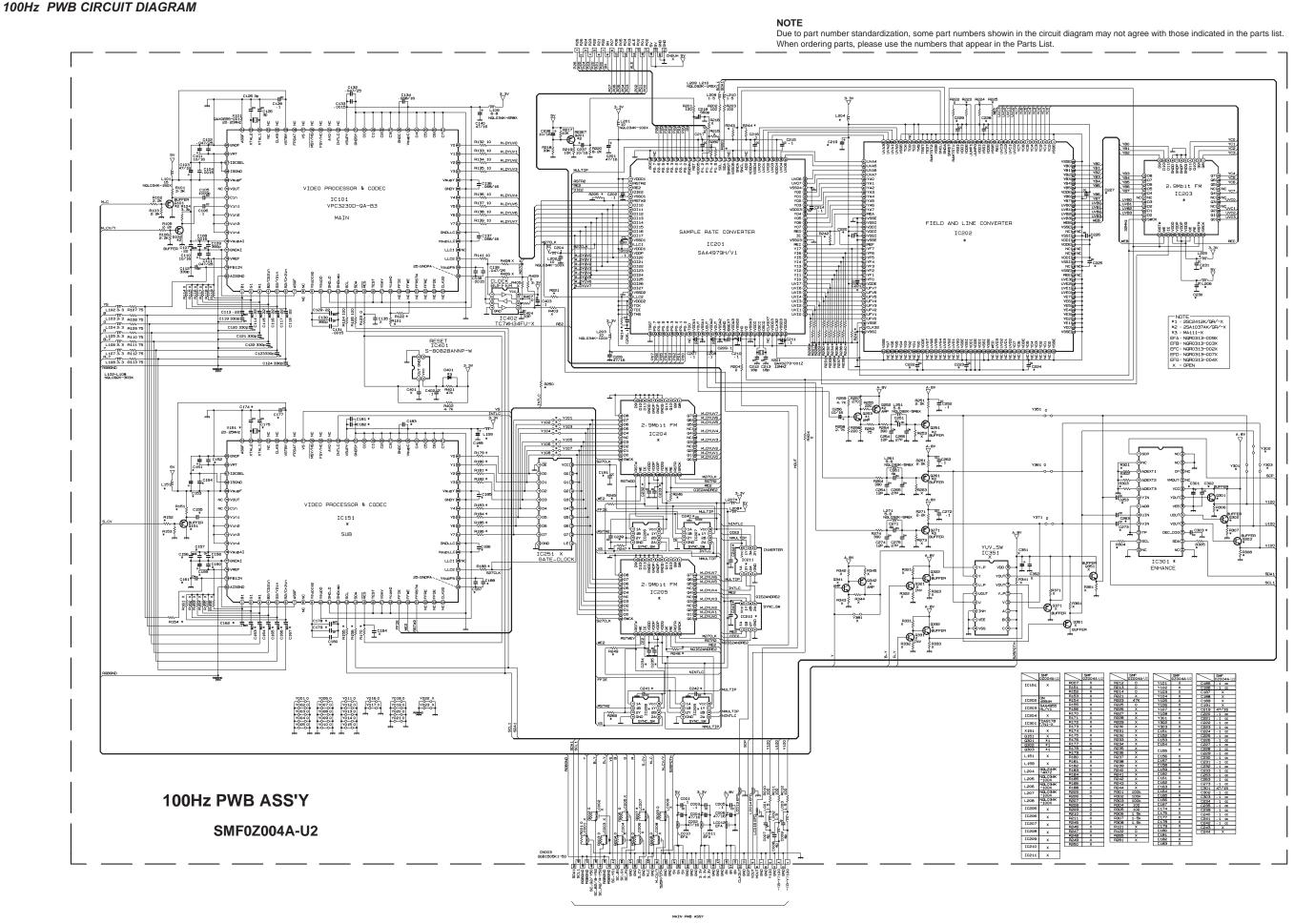
CIRCUIT DIAGRAMS MAIN PWB CIRCUIT DIAGRAM



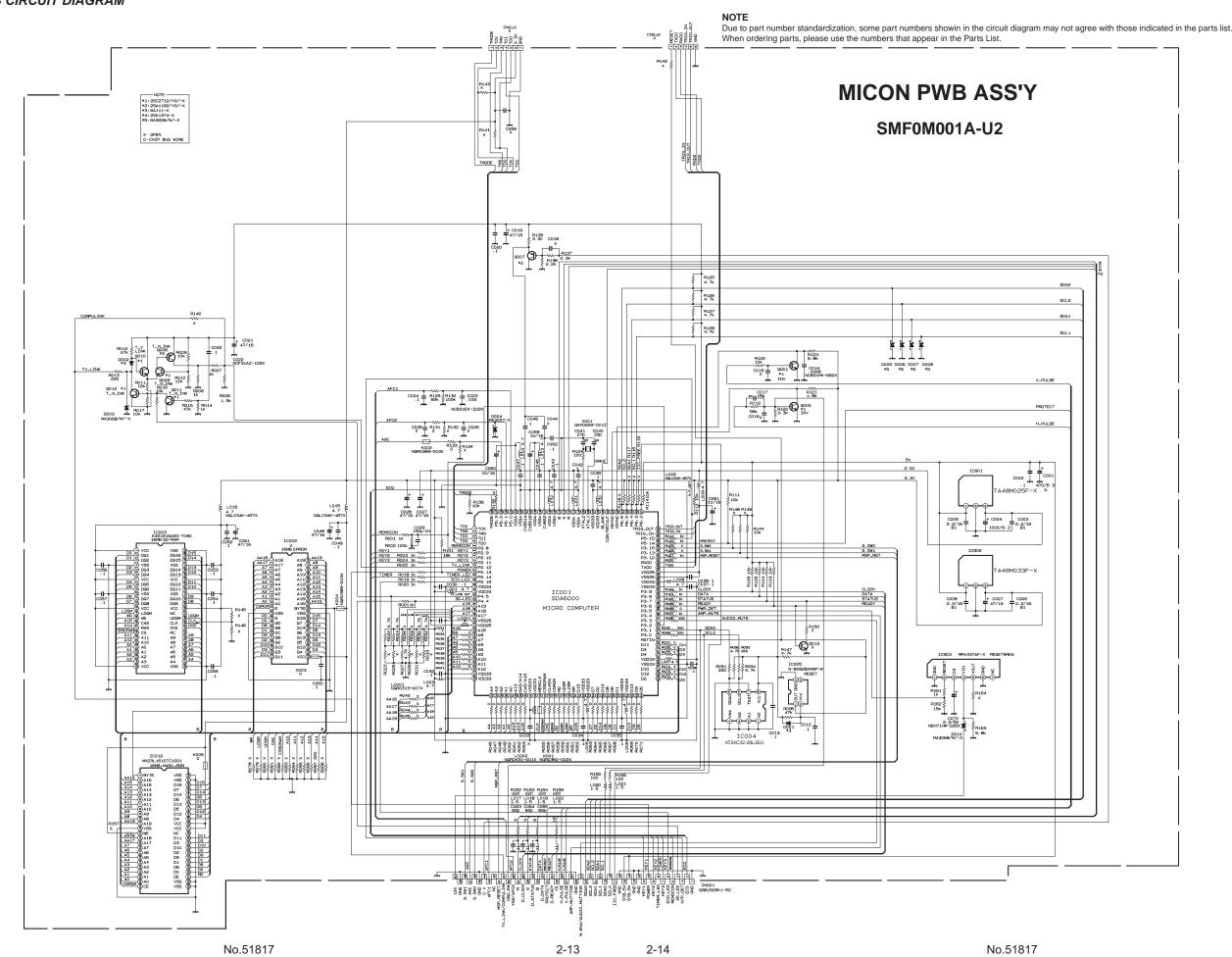


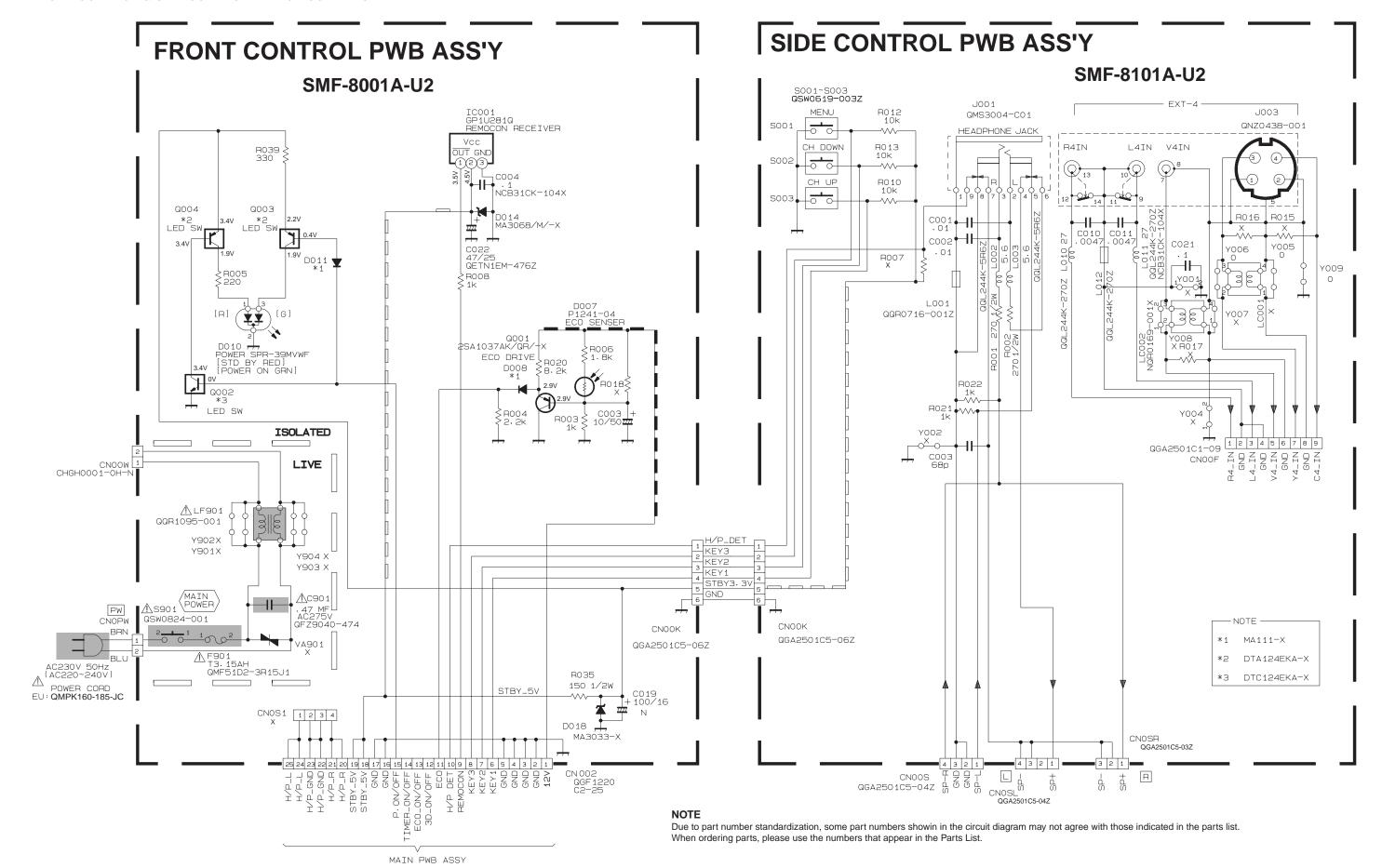


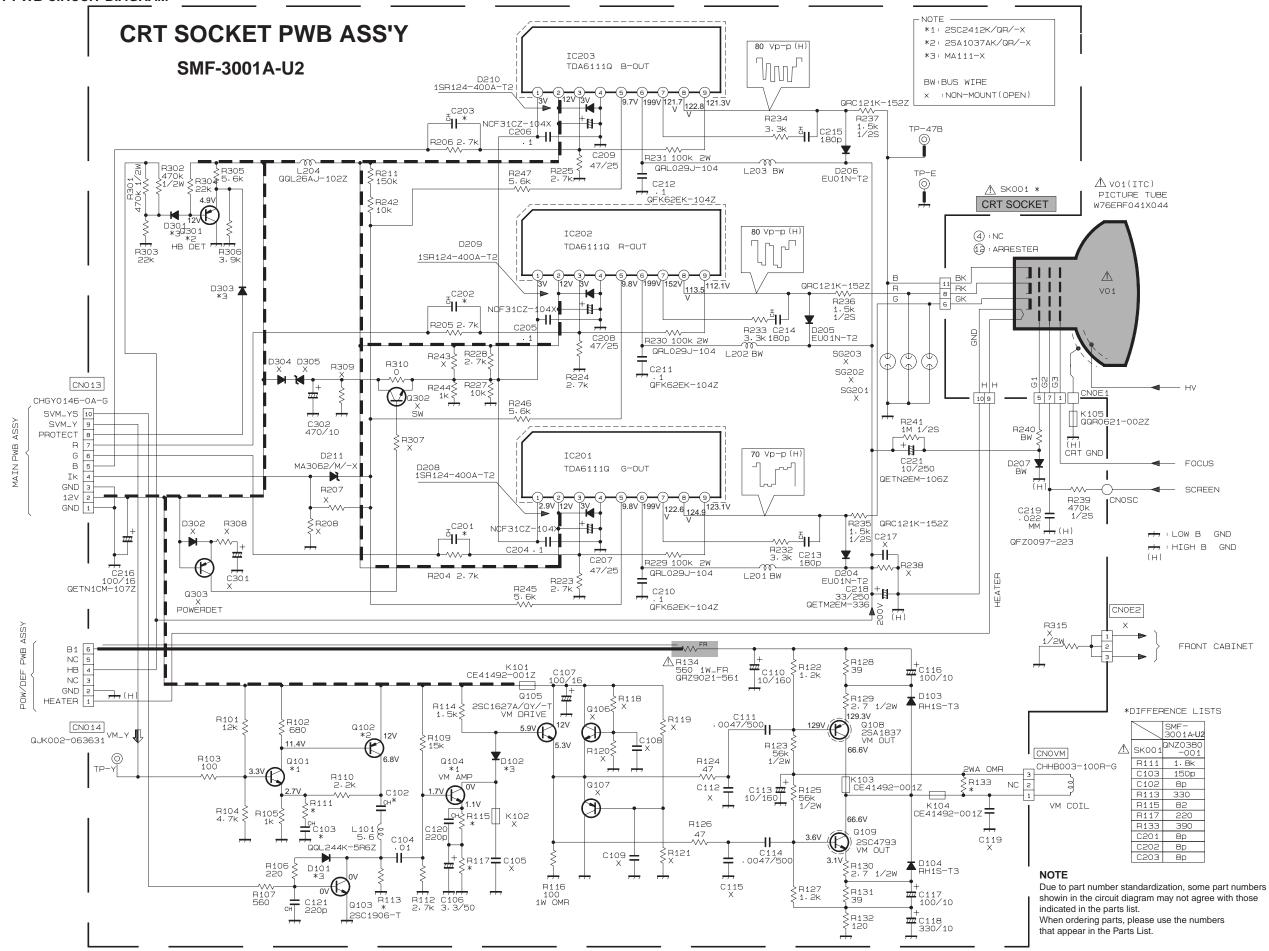
AV32L2EUGR AV32L2EUBL AV32L2EUGY AV32L2EUGR AV32L2EUBL AV32L2EUGY



AV32L2EUGR AV32L2EUBL AV32L2EUGY AV32L2EUGY

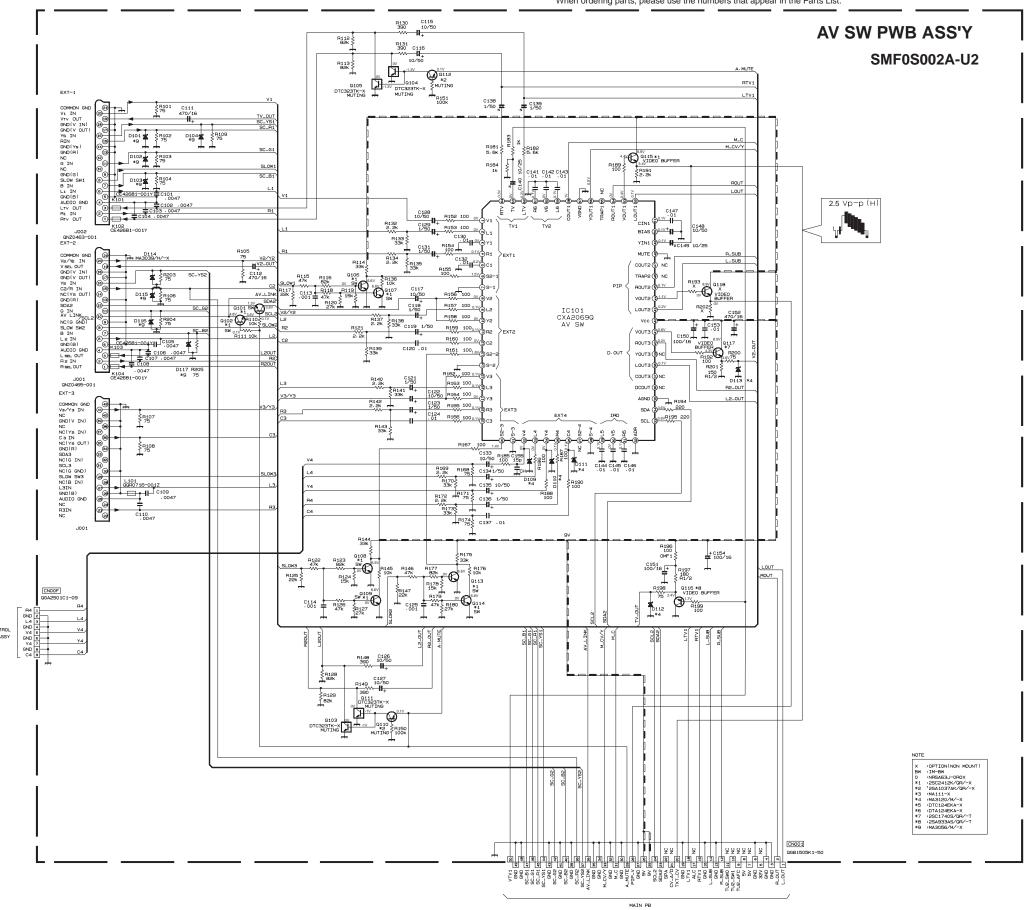




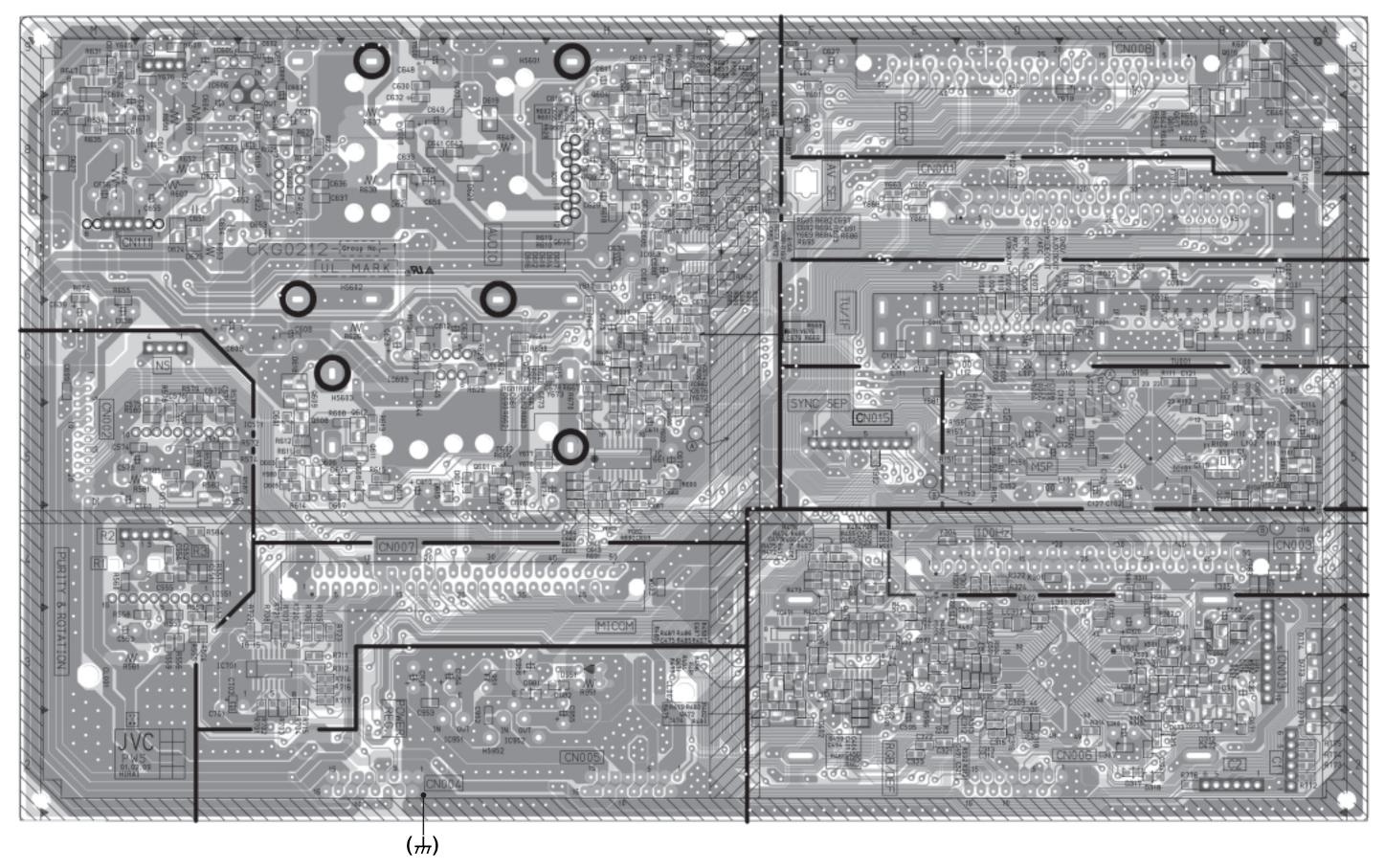


NOTE

Due to part number standardization, some part numbers showin in the circuit diagram may not agree with those indicated in the parts list. When ordering parts, please use the numbers that appear in the Parts List.

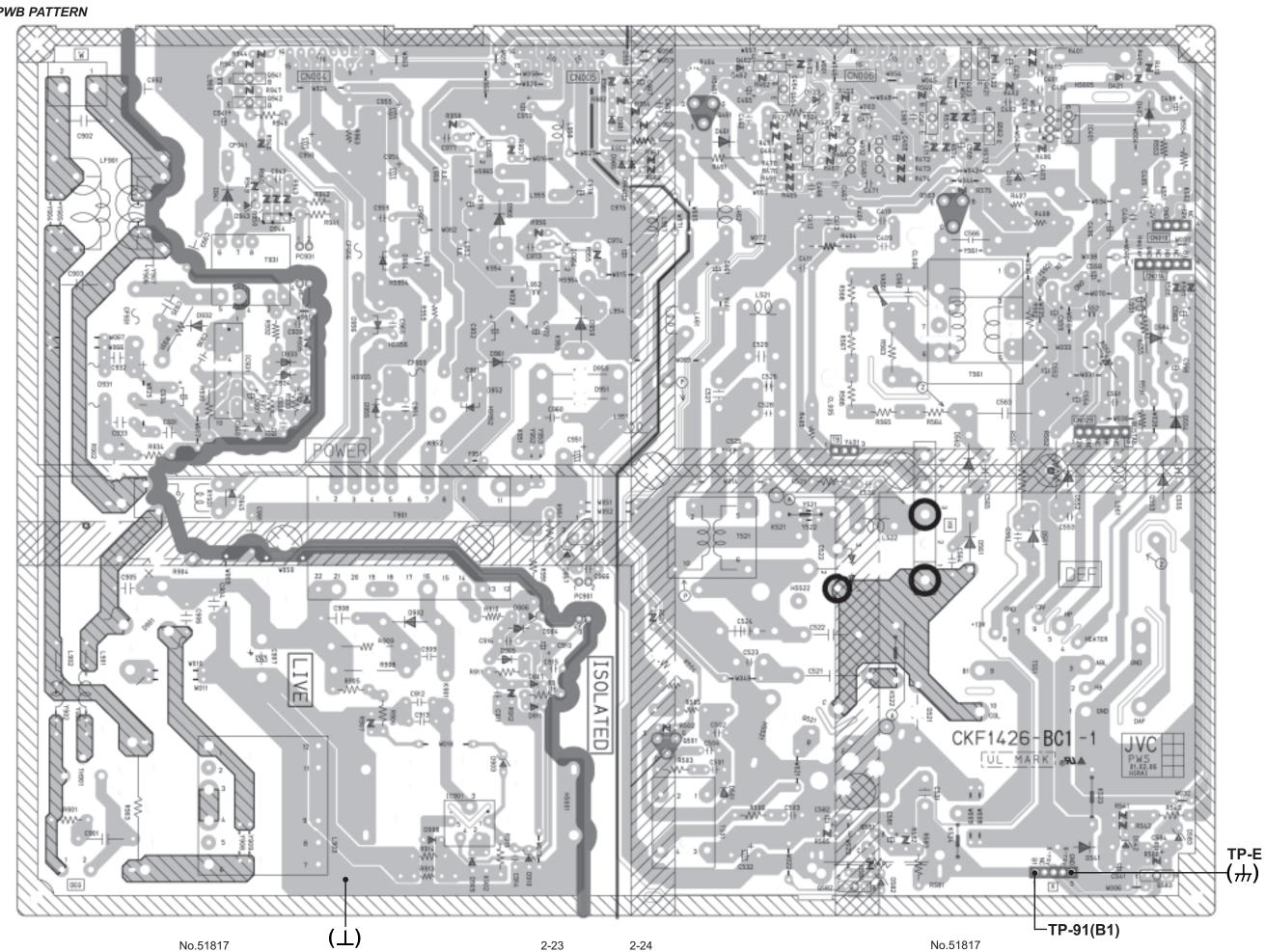






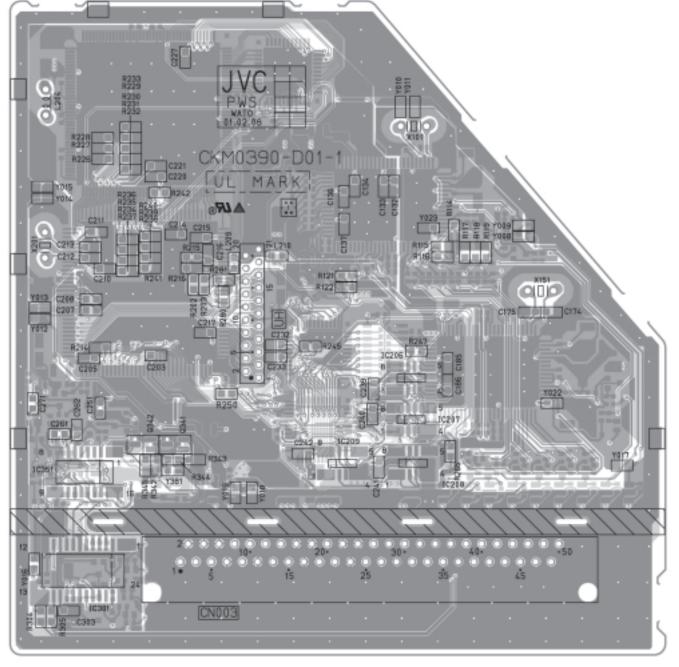
POWER & DEF PWB PATTERN

FRONT

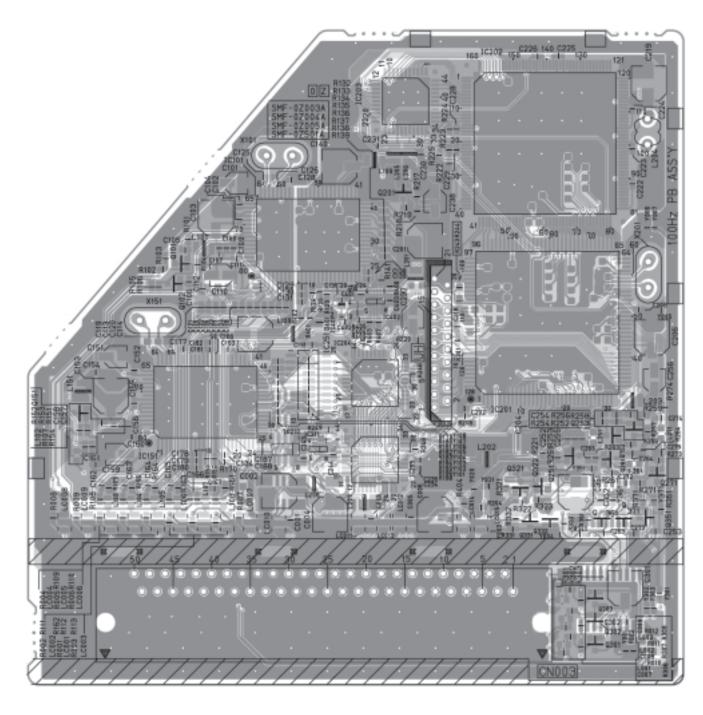


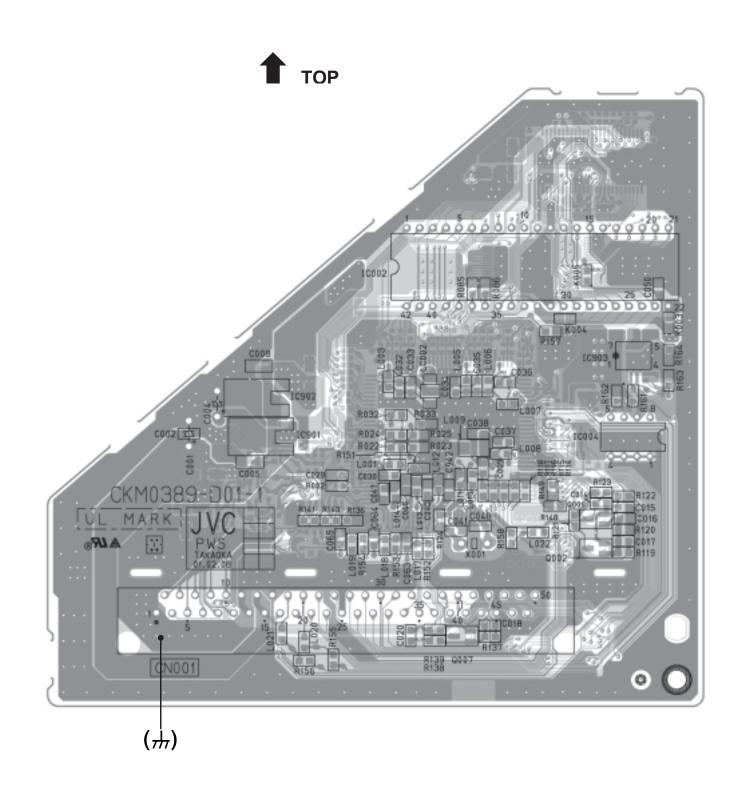
100Hz PWB PATTERN (PARTS SIDE)

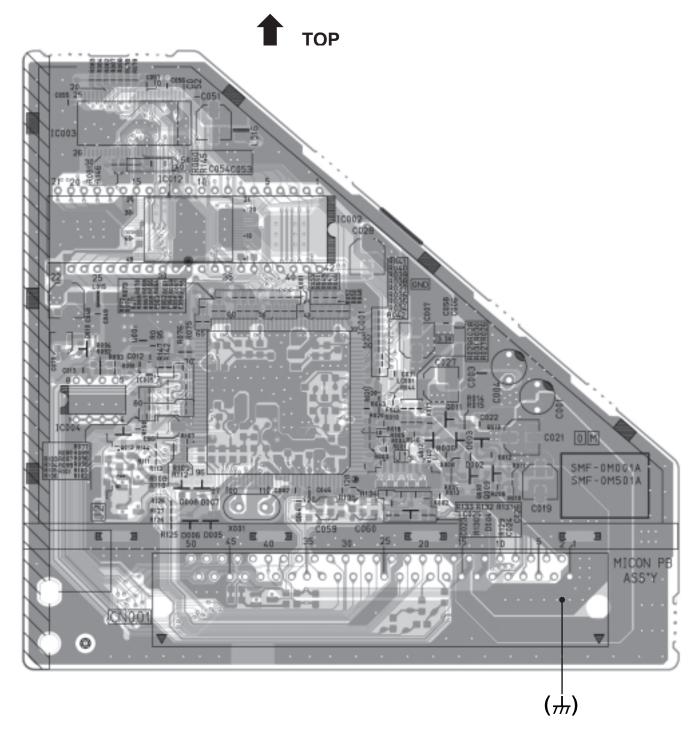




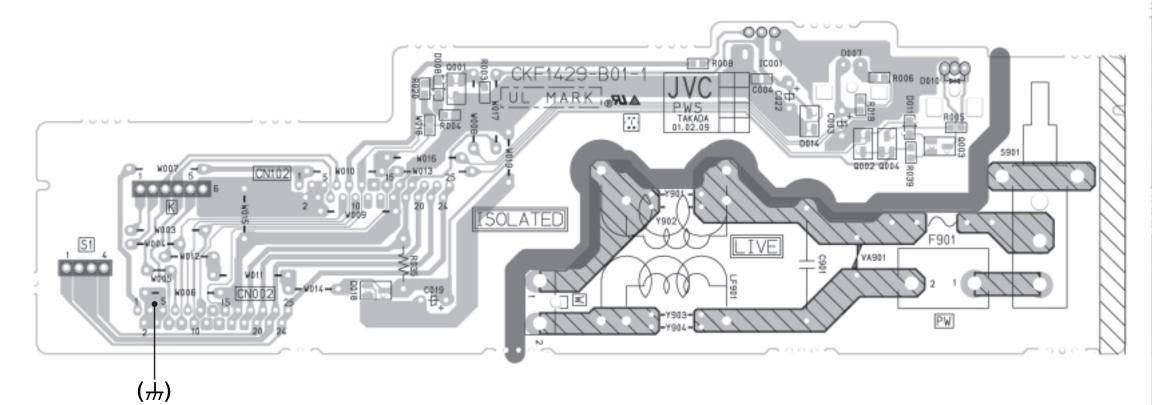




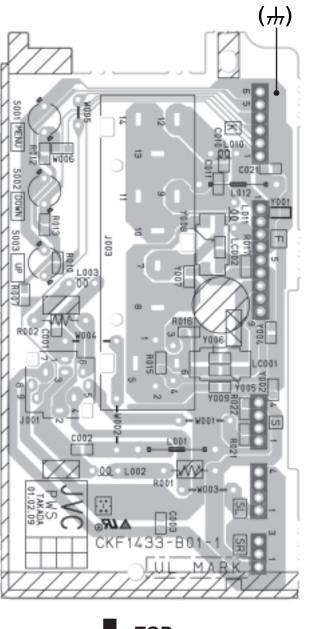








SIDE CONTROL PWB PATTERN





No.51817 2-29 2-30 No.51817

